

DOMINION OF CANADA

---

ANNUAL REPORT

OF THE

DEPARTMENT OF RAILWAYS AND CANALS

For the Fiscal Year from April 1, 1916, to March 31, 1917

*Submitted in accordance with the provisions of the Revised Statutes of Canada, 1916,  
Chapter 35, Section 33.*

PRINTED BY ORDER OF PARLIAMENT



OTTAWA  
J. DE LABROQUERIE TACHÉ  
PRINTER TO THE KING'S MOST EXCELLENT MAJESTY

1918

[No. 20—1918] Price, 10 cents.







*To His Excellency the Duke of Devonshire, K.G., P.C., G.C.M.G., G.C.V.O., etc., etc.,  
etc., Governor General and Commander in Chief of the Dominion of Canada.*

MAY IT PLEASE YOUR EXCELLENCY,—

The undersigned has the honour to present to Your Excellency the Annual Report of the Department of Railways and Canals, of the Dominion of Canada, for the past fiscal year from April 1, 1916, to March 31, 1917.

J. D. REID,  
*Minister of Railways and Canals.*







## CONTENTS.

Report of the Deputy Minister.

## APPENDICES.

Appendix I. Statements of the Accountant of Department.

II. Reports of the General Manager and other officers of Government Railways.

III. Report of the Chief Engineer of the Department.

IV. Report of the Government Chief Engineer for the Western Division of the National Transcontinental Railway.

V. Report of the Board of Engineers, Quebec Bridge.







**REPORT**  
OF THE  
**DEPUTY MINISTER OF RAILWAYS AND CANALS**  
**FOR THE YEAR ENDING MARCH 31, 1917.**

---

To the Honourable J. D. REID,

Minister of Railways and Canals.

SIR,—In presenting the departmental report for the fiscal year 1916-17, it is necessary that explanation be given as to the very considerable reduction in the amount of the material comprised in it, in comparison with reports of previous years. This reduction has been made in conformity with the requirements of the Order in Council of the 23rd of October, 1917, passed in view of the conditions arising out of the war, which have compelled curtailment of expenditure on public printing.

The present report accordingly omits all maps, plans, and illustrations of canal and railway works, such as in past years have been supplied, and which, though of much interest and value, are not essential, and can reasonably be dispensed with under the circumstances.

Further, the printing of the subsidiary detail reports sent in by the individual engineers and other officers has, as required by the order, been omitted, only the direct reports of the chiefs being inserted; the detail reports are, however, of course, available for reference in the department if required. Various statistical tables and miscellaneous information relating to previous years, dimensions, etc., are this year omitted, but are available in the reports already published. The reports of the accountant of the department and of the comptroller of government railways are printed practically as heretofore, though with some compression and rearrangement, which does not impair their utility.

The making of these reductions has naturally been facilitated by the suspension of certain construction works undertaken by the department and the curtailment of its operations, otherwise, in the interests of economy.



## GENERAL SUMMARY.

During the twelve months of the past fiscal year 1916-17 the expenditures made by or through the department on its several works of operation, maintenance, and construction, both railway and canal, and in furtherance by subsidy, under specific votes granted by Parliament, of railway enterprises in various parts of Canada other than the government roads; also the revenue derived from the government works, aggregate as follows: The total railway expenditure, including the Quebec bridge, amounted to \$41,895,886.53, of which \$14,737,326.70 was charged to capital, \$25,799,906.54 to revenue, and \$1,358,653.29 to income.

The railway expenditure on capital account included \$4,490,472.56 for the Intercolonial railway, \$609,751.71 for the Prince Edward Island railway, \$3,916,586.20 for the National Transcontinental railway, which is in course of construction by a board of commissioners, \$2,604,279.94 for the Hudson Bay railway, and \$2,733,677 for the Quebec bridge; \$3,724.98 for the International railway; \$46,579.38 for the New Brunswick and Prince Edward Island railway; and \$332,254.93 for the Quebec and Saguenay railway.

The railway expenditure on income included a total of \$959,583.88 paid as subsidies to railways other than the government roads, \$215,947.14 for the Board of Railway Commissioners for Canada, and \$46,630.53 for railway grade crossing fund, and \$44,149.09 for surveys and inspections.

The expenditure on the Intercolonial railway amounted to \$20,143,830.34, namely, \$4,490,472.56 on capital account, and on revenue account (working expenses and improvements and betterments), \$15,653,357.78.

On the Prince Edward Island railway, the total expenditure was \$1,443,604.73, of which \$609,751.71 was charged to capital and \$833,853.02 to revenue.

The total expenditure on the National Transcontinental railway amounted to \$11,723,508.40, namely, \$3,916,586.20 on capital, and \$7,806,922.20 on revenue account (working expenses). The working expenses for the International railway amounted to \$165,107.26, which does not include the sum of \$90,000 paid as rental for the road. The working expenses for the New Brunswick and Prince Edward Island railway were \$78,031.22, and for the St. John and Quebec railway, \$98,300.42.

The expenditure on canals aggregated \$6,028,100.73, of which \$4,304,589.09 was chargeable to capital account, \$399,414.50 to income, \$801,937.90 for staff, and \$522,159.24 for repairs, the last two amounts being charged to revenue.

Adding to the above for miscellaneous expenditures common to both branches, the sum of \$302,095.14, of which \$299,934.09 was chargeable to the special war appropriation (special services having been required of the department in connection with the war, entailing expenditures for the protection of its bridges and canal structures, transportation of goods for the Belgium Relief Fund, the Red Cross Society, and for payment of salaries for substitutes for enlisted men), the total expenditure for the year on railways and canals was \$48,226,082.40.

The total revenue derived from the government railways and canal works was \$24,001,181.75, of which the railways produced \$23,539,758.61, and the canals,



## SESSIONAL PAPER No. 20

\$461,423.14,<sup>1</sup> the sum of \$271,820.28 being derived from hydraulic and other rents, and \$175,536.50 from the Port Colborne elevator.

The total government expenditure on railways prior to and since Confederation (July 1, 1867) up to March 31, 1917, amounts, on capital account, to \$391,884,025.79, including expenditure on the Quebec bridge, and also the sum of \$25,000,000 granted to the Canadian Pacific Railway Company for its main line; also the amount, \$660,683.09, expended on the Annapolis and Digby railway. In addition, there has been expended from the consolidated fund a total of \$267,997,373.17, covering the operating expenses of the government roads, and \$75,117,415.47 on subsidies other than that for the main line of the Canadian Pacific railway, making a total expenditure of \$734,998,814.43.<sup>2</sup> Of this amount, the sum of \$13,881,460.65 was expended prior to Confederation, namely on the construction of portions of what is now the Intercolonial Railway system, \$10,766,725.54, and on the construction of the Prince Edward Island railway, \$3,114,735.11.

The total government expenditure on canals prior to and since July 1, 1867, to March 31, 1917, amounts on capital account to \$122,919,314.84, of which \$20,593,866.13 was expended prior to Confederation, and from the consolidated fund, for operation, maintenance and repairs, \$41,221,419.60, making a total of \$164,140,734.44.

The total expenditure on the two branches, railways and canals, up to March 31, 1917, is as above, \$899,139,548.87, adding to which for general expenditures embracing both, the further sum of \$1,457,384.31, the grand total expenditure amounts to \$900,596,933.18.

The total revenue collected since July 1, 1867, to March 31, 1917, amounts, from the government railways, to \$248,395,298.47, and from the canals to \$16,665,271.32, making a total of \$265,060,569.79.

Details in tabulated form showing the general classes and directions of the above expenditures and revenues will be found in the statements of the accountant of the department, printed in the appendices, Part I.

## GOVERNMENT RAILWAYS IN OPERATION.

The government railways in operation and their main line lengths are, respectively, as follows:—

	Miles.
Intercolonial Railway.. . . .	1,518.39
Prince Edward Island Railway.. . . .	275.20
National Transcontinental Railway.. . . .	1,811.28
Grand Trunk Pacific Railway (the Lake Superior Branch leased).. . . .	191.75
New Brunswick and Prince Edward Island Railway.. . . .	36.05
International Railway of New Brunswick.. . . .	111.30
Total.. . . .	3,943.97
St. John and Quebec Railway operated but not owned.. . . .	119.87
Total.. . . .	4,063.84

<sup>1</sup> Under the authority of an Order in Council, dated June 22, 1905, the system of charging tolls for the passage of vessels and goods was abolished on all the canals of the Dominion. Records, however, are kept for statistical purposes, and the compilation of the resultant figures is given in a separate report issued by the department.

<sup>2</sup> This amount does not include the annual payment of \$119,700 to the Provincial Government of Quebec, being interest at the rate of 5 per cent on the sum of \$2,394,000 up to 1905, granted by 47 Victoria, ch. 8 (1884), nor the annual payment of \$107,730, being interest at the rate of 4½ per cent since and including 1905, on the said sum of \$2,394,000, for the line between Ottawa and Quebec, which sum was transferred to the public debt as a liability, and is dealt with by the Finance Department. (See Public Accounts, 1893-4, page 10, and 1906, page 79.)



8 GEORGE V, A. 1918

Information as to these roads will be found in reports of the General Manager and other officials, Appendix II, with traffic details of each road separately in *tabulated* form on pages 40 and 41.

The Intercolonial Railway earnings amounted to \$16,767,386.89, and its working expenses to \$15,653,357.78, including the rental of the Vale railway at \$1,200 a year, producing a surplus of \$1,112,829.11. This surplus has been partly absorbed, under the authority of the Act of 1912, chapter 8, by crediting the Rail, the Fire and the Equipment Renewal Accounts with amounts aggregating \$1,070,334.64. \$4,000 was paid as "compassionate allowances" under special votes.

The Prince Edward Island Railway working expenses amounted to \$833,853.02. Its earnings amounted to \$630,045.69, the deficit being \$203,807.33.

The International Railway working expenses amounted to \$165,107.26, and the earnings to \$116,678.67, a deficit of \$48,428.59. This does not include the sum of \$90,000 paid as interest on the purchase price of the road.

The St. John and Quebec Railway working expenses amounted to \$98,300.42, and the earnings to \$70,759.62, a deficit of \$27,540.80.

The New Brunswick and Prince Edward Island Railway working expenses amounted to \$72,357.80, and the earnings to \$38,336.75, leaving a deficiency of \$34,021.05. This does not include \$5,673.42 paid as interest on the purchase price of the road pending payment.

The working expenses of the portion of the National Transcontinental Railway operated by the Government amounted to \$7,206,922.20, not including \$600,000 paid for rental of the Lake Superior branch. The earnings amounted to \$5,916,550.99.

The total length of the government railways in operation amounted to 3,943.97 miles. The train mileage was 12,412,757 miles, and car mileage, 204,369,625. The total earnings were \$23,930,398.06, which is \$5,853.38 per mile, \$1.86 per train mile, or \$11.30 per car mile. The expenses were \$1.89 per train mile, amounting to \$5,973.72 per mile of railway.<sup>1</sup>

The expenditure for maintenance of way and structures amounted to \$4,727,351; maintenance of equipment, \$4,426,200; traffic, \$418,425; rail transportation, \$13,227,794; water transportation, \$370,229; rental of leased lines, \$696,873; miscellaneous, \$760,397; the total expenditures aggregated \$24,627,261.<sup>1</sup>

The repairs to locomotives amounted to \$1,803,420.63; to freight cars, \$1,327,376.99; to passenger cars, \$721,547.50.<sup>1</sup>

The passenger traffic produced \$6,705,080.28; the freight traffic, \$16,642,458.16; and mail and express, \$664,910.04. The total number of passengers was 5,764,170, namely, through passengers, 459,075, and local, 5,305,095.<sup>1</sup>

The local freight traffic amounted to 5,605,403 tons, and the through traffic to 4,744,073 tons, a total of 10,349,476 tons; the total mileage for both was 3,012,144,640 miles.<sup>1</sup>

There are 76.21 miles of double tracking and 973.71 miles of sidings and spurs.

The weight of the rails laid is 80 pounds per yard for 3,178.02 miles, and 85 pounds for 273.24 miles, the balance being of lighter weight rails.

---

<sup>1</sup> These figures do not include the St. John and Quebec railway.



## SESSIONAL PAPER No. 20

The capacity of the freight yards has been increased largely at several points, and two grain elevators are being built, a new 500,000-bushel one at St. John, N.B., replacing that destroyed by fire, and the other a 1,000,000-bushel one at Transcona, Man.

The sum of \$1,070,334.64 was placed to the credit of Equipment Renewal Account and \$40,266.01 was received for sales of old rolling stock. During the year there was spent on this account a total of \$2,514,092.38 in the purchase of rolling stock, leaving a credit balance on March 31, 1917, of \$1,661,208.89. -

The total number of freight cars on hand at the close of the year is 17,121, and of passenger cars, 639. There are 10,400 box cars, 198 refrigerating cars, 3,371 platform cars, 1,175 dump cars, 385 stock cars and 1,592 cars of other descriptions. In addition, there are 575 work cars.

The number of locomotives at the close of the year was 547, of which 113 were either purchased or built during the year.

In addition to the above rolling stock, the equipment of the Prince Edward Island railway, which is a narrow-gauge railway, consists of 31 locomotives, 59 passenger cars, 530 freight cars and 20 work cars.

The Safety Engineer reports that during the year 629 employees were injured and thirteen killed; 21 passengers were injured, but none were killed.

The value of stores on hand at the close of the year was \$4,818,102.74, comprising ordinary stores and fuel, \$4,071,207.71, and roadway and bridge material, \$746,895.03.

The above statements do not contain the expenditure nor revenue of the St. John and Quebec railway.

The Carleton branch of the Prince Edward Island railway, 3 miles in length, connecting Carleton Point to the Cape Traverse branch of the railway, has been completed. The terminal works at cape Tormentine and at Carleton Point are completed, with the exception of certain filling and dredging.

### COMPARATIVE STATISTICS, INTERCOLONIAL RAILWAY, YEARS 1915-16 AND 1916-17.

In 1915-16, the average tons of freight carried per train, producing revenue, was 327.86, and the number of passengers, 64.15; in 1916-17, the average freight tonnage was 357.07, and passengers, 94.82.

In 1915-16, the average tons per loaded car, producing revenue, was 19.22, and the number of passengers, 9.24; in 1916-17, the number of tons was 22.08, and of passengers, 12.16.

The number of tons per train, all freight, in 1915-16, was 332.62, and in 1916-17, 358.40.

The number of tons per car, all freight, in 1915-16, was 15.95, and in 1916-17, 18.27.

The average distance each ton of freight was carried in 1915-16 was 280.58 miles, and in 1916-17, 261.53. The average distance passengers were carried in those years was 48.21 miles and 72.04, respectively.



8 GEORGE V, A. 1918

The average number of loaded cars per train in 1915-16 was 17.05 cars of freight, and 6.94 cars of passengers; in 1916-17, the number of freight cars per train was 16.03, and of passengers, 7.80.

The average number of empty cars per train in 1915-16 was 3.79, and in 1916-17, 3.58.

In 1915-16, the average of train miles per mile of road was, for freight trains, 3,137.84, and for passenger, 2,029.72; in 1916-17, these figures were, respectively, 3,365.72 and 2,270.37.

In 1915-16, the average per mile of road of revenue producing freight carried one mile was 1,028,785.16 tons, and passengers, 130,201.02; in 1916-17, the figures were: freight, 1,191,703.93 tons, and passengers, 215,271.92.

The number of tons all freight, per mile of road, carried one mile in 1915-16 was 1,043,694.43, and in 1916-17, 1,206,280.31.

The train mileage in 1915-16 was: passenger, 3,099,463 miles; freight, 4,791,476 miles; and in 1916-17, passenger, 3,447,301 miles; freight, 5,110,481 miles.

The loaded car mileage in 1915-16 was 81,714,686 miles, and in 1916-17, 81,933,436 miles.

The empty car mileage in 1915-16 was 18,178,425 miles, and in 1916-17, 18,294,030 miles.

The caboose car mileage in 1915-16 was 4,515,858 miles, and in 1916-17, 4,773,896 miles.

The total car mileage in 1915-16 was: passenger, 21,506,251 miles, and freight, 104,408,969 miles; in 1916-17 the figures were: passenger, 26,872,659, and freight, 105,001,362.

The total freight moved in 1915-16 was 5,680,178 tons; of this quantity, 5,447,220 tons were revenue producing. In 1916-17 the total freight moved was 7,003,379 tons, of which 6,770,224 tons were revenue producing.

Repairs to passenger cars cost, per car, in 1915-16, \$717.77, or per car mile, 1.67 cents; and in 1916-17, \$882.59, or per car mile, 1.73 cents.

Repairs to freight cars cost, per car, in 1915-16, \$60.12, or per car mile, 0.81 of a cent; and in 1916-17, \$75.83, or per car mile, 0.78 of a cent.

Repairs to locomotives cost, per locomotive, in 1915-16, \$1,930.91, or per locomotive mile, 6.86 cents; and in 1916-17, \$2,797.43, or per locomotive mile, 9.48 cents.

#### PRINCE EDWARD ISLAND RAILWAY.

This is a narrow gauge railway, 3 feet 6 inches. It extends from Tignish to Georgetown, 158.60 miles, and from Charlottetown to Murray Harbour, 52.30 miles, with branches to Souris, Elmira and Cape Traverse. The length of the road operated was 275.20 miles.

#### CAPITAL ACCOUNT.

There was an addition of \$609,751.71 to the expenditure on capital account during the year ended March 31, 1917, making the total capital expenditure \$11,451,124.15. The principal item was \$604,676.86 for the car ferry between Carleton Point, P.E.I., and Cape Tormentine, N.B., on the mainland.



## SESSIONAL PAPER No. 20

## REVENUE ACCOUNT.

The gross earnings amounted to \$630,045.69, and the working expenses to \$833,853.02, leaving a deficiency of \$203,807.33. Compared with the previous year, there was an increase of \$239,118.87 in the gross earnings, and an increase of \$288,832.40 in the working expenses.

The number of passengers carried was 401,636, producing a traffic of \$247,002.37, of which \$69,113.52 was for water traffic. Of freight, 150,101 tons were carried. The freight earnings amounted to \$219,442.74 for the railway and \$108,508.13 for water traffic to mainland. The earnings from mail and express amounted to \$47,498.70 for the railway and \$7,593.75 for water traffic.

The engine mileage was 458,376 miles; the train mileage, 368,495 miles; the car mileage, 2,143,610 miles.

The gross earnings per mile of railway amounted to \$1,616.39; per engine mile, 97 cents; per train mile, 1.21; and per car mile, 20.75 cents.

The working expenses per mile of railway aggregated \$2,135.15, and per train mile, 159.46 cents.

## NEW BRUNSWICK AND PRINCE EDWARD ISLAND RAILWAY.

Under an agreement, dated March 18, 1915, ratified by the Act of 1915, chapter 16, and under an Order in Council of May 12, 1915, this railway has been purchased by the Government, as part of the government railway system, for the sum of \$270,000. The agreement provided that it should be held to have come into force on August 1, 1914, and that the Government should have the right to sole possession, to operate the road, and to receive all its revenues, until the transfer is completed and the purchase price paid. The transfer has not yet been completed, but the road was taken over on August 31, 1914, and has since been operated by the Government.

The road is 36.05 miles in length, and runs from Sackville to cape Tormentine, New Brunswick, forming a connection between the Intercolonial railway and the new car ferry between cape Tormentine and Carleton Point, on Prince Edward Island.

Details as to working expenses, traffic, etc., will be found in the reports of the General Manager of Government Railways and other officers, Appendix II.

## INTERNATIONAL RAILWAY OF NEW BRUNSWICK.

Under an agreement, dated August 1, 1914, ratified by the Act of 1915, chapter 16, and under an Order in Council of August 27, 1914, a lease of this railway has been entered into by the Government for a term not exceeding five years, at an annual rental of \$90,000, payable half-yearly, with option of purchase at any time within that period for the sum of \$2,700,000. The road was taken over, as part of the government railway system, on August 1, 1914. It is 111.30 miles in length, extending from the Intercolonial railway at Campbellton, N.B., to St. Leonards, N.B.

Details as to working expenses, earnings, traffic, etc., will be found in the reports of the General Manager of Government Railways, and other officers, Appendix II.



8 GEORGE V, A. 1918

## ST. JOHN AND QUEBEC RAILWAY.

By the Act of 1912, chapter 49, a certain agreement, dated the 5th of March, 1912, made on behalf of the Dominion and the province of New Brunswick and the St. John and Quebec Railway Company for leasing to the Dominion, for a term of ninety-nine years, the company's railway, when fully constructed, from the city of St. John, N.B., to a point of connection with the Transcontinental railway at or near the town of Grand Falls, N.B., was ratified; the Act to come into force on proclamation by the Governor in Council. The agreement provided that on construction and equipment of certain sections, the Dominion would lease and operate the same.

The road extends from Centreville to Gagetown, 119.87 miles. The portion from Centreville to Fredericton was taken over for operation by the Canadian Government Railways on January 1, 1915, and the portion from Fredericton to Gagetown on March 2, 1915.

Details as to working expenses, earnings, traffic, etc., will be found in the reports of the General Manager of Government Railways and other officers, Appendix II.

## HUDSON BAY RAILWAY.

This railway will run from The Pas, Manitoba, a point on the river Saskatchewan where connection is made with the Canadian Northern Railway system, to Port Nelson, on the western coast of Hudson bay.

The work of construction for the first 185 miles, from The Pas to Thicket Portage, was placed under contract in August, 1911. A contract for a further distance of 68 miles, from Thicket Portage to Split Lake Junction, was let on September 20, 1912, and a third contract, covering the distance, 165 miles, from Split Lake Junction to Port Nelson, on December 17, 1912, a total distance of 418 miles.

The final location into Port Nelson was completed in August, 1914, making the total length of the line from The Pas to Port Nelson, 424 miles. By the end of the fiscal year, March 31, 1917, grading had been completed, except about 11 miles of gaps, to Port Nelson; the track had been laid and the telegraph line built up to about mile 334, the second crossing of the river Nelson, at Kettle rapids.

Over 80 per cent of the track, out of the total 424 miles of railway, has been laid up to the second crossing of the Nelson river at Kettle rapids, about 90 miles from Port Nelson, where the bridge substructure work has been begun.

The work of constructing the terminals for the railway at Port Nelson has been carried on by the Department with a force under an engineer in charge.

The construction of the permanent deep water works, giving connection between the mainland and deep water, has made satisfactory progress in view of an unusually stormy season. The system of steel bridges, seventeen spans, has been completed.

In the season of navigation of 1915 occulting acetylene gas beacon lights, visible at a distance of 8 miles, were established by the Department of Marine and Fisheries at a number of points in Hudson bay and Hudson straits.

Communication with Port Nelson is afforded by means of Marconi wireless stations established at that point and at The Pas.



## SESSIONAL PAPER No. 20

The expenditure for the fiscal year ended March 31, 1917, was \$2,604,279.94, making the total expenditure up to that date, \$18,354,188.37.

## NATIONAL TRANSCONTINENTAL RAILWAY.

Under an agreement, dated July 29, 1903, ratified by the Dominion Act of that year, chapter 71, and under a modifying agreement dated February 18, 1904, ratified by the Act of that year, chapter 24, the Grand Trunk Pacific Railway Company, a company incorporated by the Act of 1903, chapter 122, undertook certain obligations in respect of the construction and operation of a line of railway, wholly upon Canadian territory, between the city of Moncton, in the province of New Brunswick, and the navigable waters of the Pacific ocean. The railway is composed of two divisions, namely, the eastern division, between Moncton and Quebec, thence westerly through the northern part of the provinces of Quebec and Ontario, and, in the province of Manitoba, to the city of Winnipeg, and the western division, between Winnipeg and the Pacific ocean. The eastern division is being constructed by the Government under commissioners appointed by the Governor in Council, and on completion is to be leased to and maintained and operated by the company, who undertake to construct at their own cost, and maintain and operate, the western division. The lease of the eastern division is to be for a period of fifty years, at a rental of 3 per cent per annum upon the cost of its construction; the first seven years of the term to be free of rent; both divisions are to be equipped with modern and ample rolling stock by the company, the first equipment to be of a value of not less than \$20,000,000.

By way of assistance to the company in the construction of the western division, it is provided that the Government shall guarantee payment of the principal and interest of an issue of bonds to be made by the company for an amount sufficient to produce a sum equal to 75 per cent of the cost of its construction; but not to exceed \$13,000 per mile in respect of the prairie section from Winnipeg to the eastern limit of the Rocky mountains. This limit has been established as the east bank of Wolf creek, a point 120 miles west from Edmonton.

By the Act of 1905, chapter 98, three deeds of trust by way of mortgage, set out in the said Act, were ratified and confirmed, namely, one dated June 10, 1905, between the Grand Trunk Pacific Railway Company, the Royal Trust Company, and His Majesty, to secure the issue of first mortgage bonds; the second dated March 15, 1905, between the Grand Trunk Pacific Railway Company, the National Trust Company, and the Grand Trunk Railway Company, to secure the issue of second mortgage bonds, and the third, also dated March 15, 1905, between the Grand Trunk Pacific Railway Company, the National Trust Company, and the Grand Trunk Railway Company, to secure the issue of first mortgage bonds in respect of the branch line designated as the "Lake Superior Branch."

Payments from the proceeds of the bonds of the company for work done, etc., on the western division, are made from time to time on certificates given by the Government Chief Engineer of this division, showing approved expenditures.



8 GEORGE V, A. 1918

By the Act of 1909, chapter 19, authority was given for aiding in the completion of the construction of the "prairie" section by a loan to the company of \$10,000,000, to be secured, as collateral, subject to any prior lien, by a mortgage on the "prairie" section of their road; such loan to bear interest at the rate of 4 per cent per annum, and to be repayable in ten years.

This loan, which is dealt with by the Finance Department, was duly made; the mortgage deed being dated May 22, 1909.

By the Act of 1913, chapter 23, authority was given for a loan to the company not exceeding \$15,000,000, at 4 per cent interest, the loan being repayable by July 1, 1923. Under this authority, \$15,000,000 has been advanced to the company. Its debentures to an equal amount have been taken by the Government in pledge as security for this loan, as provided by the Act.

By the Act of 1913, chapter 24, authority was given for the purchase of 3 per cent bonds of the company to the extent of the balance of the authorized issue. Such balance, to the amount of \$6,800,000, has been purchased by the Government.

By the Act of 1914, chapter 34, authority was given for the guarantee of the principal and interest of an issue of 4 per cent bonds to be made by the company for the purpose of aiding the provision of the balance of moneys required for the completion of the "Mountain Section" to provide for expenditures not exceeding \$16,000,000; such bonds to be secured by a new trust deed granting mortgages or charges upon the present and future undertakings and properties of the company; such guarantee to be accepted as a full, final and satisfactory settlement of all claims by the company for further aid in respect of the construction of the western division.

In pursuance of this Act, a trust deed securing the issue of bonds to the amount of £3,280,000, was executed on August 5, 1914.

The several government expenditures on the eastern division were to be made from appropriations by Parliament for the purpose, and on the recommendation of the Minister of Railways and Canals, to whom accounts of all receipts, expenditures and liabilities are to be furnished monthly.

By various Acts and Orders in Council, the time for completion has been extended, and by the Act of 1914 (the Grand Trunk Pacific Railway Guarantee Act), section 11, it was provided that "notwithstanding anything contained in the said trust deed of tenth of June, 1905, or in any Act or Order in Council heretofore passed, the date for completion of the western division shall be the 31st of December, one thousand nine hundred and fifteen." By section 2 of this Act, the "Western Division" was defined as extending from the city of Winnipeg to the Pacific ocean.

By the Act of 1912, chapter 39, the construction of the eastern division, and its operation, until completed and leased to the Grand Trunk Pacific Railway Company, was placed under the charge and control of one commissioner (in place of four) to be appointed by the Governor in Council, and to hold office during pleasure. By an Order in Council, dated April 4, 1912, Mr. R. W. Leonard, C.E., the Chairman of the Commission as then existing, was appointed as such commissioner. Mr. Leonard having resigned, the Minister of Railways and Canals was appointed commissioner by an Order in Council of July 3, 1914, as authorized by the Act of that year, chapter 43.



## SESSIONAL PAPER No. 20

## EASTERN DIVISION.—MONCTON TO WINNIPEG.

Tracklaying between Moncton and Winnipeg was completed (with the exception of the Quebec bridge) in November, 1913, the last spike being driven on the 17th of that month.

Pending the completion of the Quebec bridge, the communication across the river will be made by a train ferry.

The statement of the accountant of the department (Part I of the Appendices) shows the capital expenditure on the eastern division for the year ended March 31, 1917, to be \$3,916,586.20, and the total expenditure on capital up to that date, \$163,797,783.66.

During the year 1913-14 the road was operated to a limited extent by the Intercolonial Railway, for the distance 285.25 miles, between Moncton, N.B., and Escourt, Que., a point 54.85 miles west of Edmundston, N.B. During the fiscal year 1914-15 the operation of the road was carried on by the Intercolonial Railway between Moncton and Chaudière, a distance of 455.15 miles.

On May 1, 1915, the National Transcontinental Railway from the city of Quebec to Winnipeg, a distance of 1,355.95 miles, was taken over for operation as part of the Canadian Government Railway system, and was put in operation as such on June 1, 1915.

On July 1, 1915, the Lake Superior branch, between Lake Superior Junction on the Transcontinental Railway and Fort William, Lake Superior, 191.75 miles, was taken over for operation by the Canadian Government Railways, having been leased by the Government from the Grand Trunk Pacific Railway Company.

Authority for the leasing of this branch by the Government was given by the Act of 1915, chapter 18, which provided that any contract for leasing for more than five years, or for the acquisition of the branch, was to be subject to ratification by Parliament.

Under authority of an Order in Council of June 2, 1915, a contract was entered into, dated June 29, 1915, for leasing the branch for 999 years from May 1, 1915, at a rental of \$600,000 a year, payable half-yearly, the first payment to be made on November 1, 1915. The contract provided for an option to the Government for the purchase of the branch for \$13,333,333.33 at any time after March 31, 1936, on notice of one year; the lease to be ratified before June 1, 1920.

The whole railway between Moncton and Winnipeg is operated by the Canadian Government Railways, the distance being 2,003.03 miles, including the Lake Superior branch, 191.75 miles, and the two branches into Quebec city, namely: the Cadorna branch, 5.88 miles, and the Champlain Market branch, 6.48 miles. The Quebec bridge, 0.61 mile, under construction, is not included.

The working expenses amounted to \$7,206,922.20, and the gross earnings to \$5,916,550.99, leaving a deficit of \$1,290,371.21. In addition, \$600,000 was paid as rental for the Lake Superior branch.

Details will be found in the statements of the Comptroller and Treasurer of Government Railways, herewith (Appendix, Part II).



8. GEORGE V, A. 1918

## WESTERN DIVISION.

The Western Division extends from the western boundary of the Winnipeg terminals, on the east bank of the river Assiniboine, in the city of Winnipeg, to the city of Prince Rupert, on the Pacific coast, a distance of 1,748 miles, including the  $3\frac{1}{2}$  miles on the Shore line of the terminal grounds.

It is divided into two sections, namely, the "Prairie Section," extending from Winnipeg to the east bank of Wolf creek—a point 120 miles west of Edmonton, the capital of the province of Alberta—a distance of 915 miles, and the "Mountain Section," which extends from the east bank of Wolf creek to Prince Rupert, a distance of 830 miles. The terminals extend for a further distance of  $3\frac{1}{4}$  miles around the water front of the city of Prince Rupert.

The Government chief engineer of the division, on whose certificates payments are made to the company, is Sir Collingwood Schreiber, K.C.M.G., whose report, showing the position of the work at the close of the fiscal year, March 31, 1917, will be found printed in the appendices hereto, Part IV. He states that the entire division is in good, safe condition for operation for public traffic, but that to comply with the parliamentary acts, the contract and the specification, work to the estimated value of \$2,297,500 remained to be executed on the Prairie section, and of \$2,330,385 on the Mountain section. He gives details of this work. He states that the amount of certified expenditure is: for the Prairie section, \$37,910,534.88, and for the Mountain section, \$93,160,195.76, a total of \$131,070,730.64.

The whole division between Winnipeg and Prince Rupert has been operated since September 6, 1914.

QUEBEC BRIDGE.<sup>1</sup>

On August 29, 1907, the cantilever bridge in course of construction over the river St. Lawrence by the Quebec Bridge and Railway Company (originally commenced under a subsidy of \$1,000,000 authorized by the Act of 1899, chapter 7, and a subsidy agreement, dated November 12, 1900), collapsed.

Under the terms of an agreement with the company, dated October 19, 1903, ratified by the Act of 1903, chapter 54, the Government had undertaken to guarantee the principal and interest of the bonds or other securities of the company to the limit of \$6,678,200, the company releasing claim to the balance remaining unpaid of the said subsidy; such guarantee to be secured by mortgage on the company's franchises, tolls and property. On February 1, 1904, a mortgage trust deed was executed, conveying to the Royal Trust Company (Montreal) as trustees, all the property and franchises of the company, and providing for the issue of bonds accordingly.

It was provided in this agreement that the Government should have the right at any time, on one month's notice, to take over the company's undertaking, assets,

---

<sup>1</sup> The history of the Government's connection with the bridge prior to its collapse is given in the Department Annual Report of 1907-8, p. xlvii.



## SESSIONAL PAPER No. 20

property and franchises on paying the shareholders the amount of their stock at par not exceeding \$265,585.70, with simple interest at 5 per cent and a premium of 10 per cent on the par value of the paid-up shares.

Of the said subsidy of \$1,000,000, there had been paid to the company a total of \$374,353.33 prior to the execution of the above agreement, and subsequent to its execution, payments were made from the proceeds of their bonds on certificates of the Government engineer covering work done and materials delivered.

After the collapse of the bridge, the right of the Government to take over the company's undertaking was exercised under the authority of an Order in Council of August 17, 1908. The date of assumption was December 1, 1908. The total of the amounts paid by the Government to the several shareholders for their shares was \$355,279.07, payment being made to the parties concerned in November, 1908. The deed of assignment and transfer from the company to the Government was dated October 18, 1909.

Under authority of an Order in Council of August 17, 1908, a board of three engineers was constituted for preparation of a new design and specification, and for the reconstruction of the bridge, with powers to call in expert engineers as advisers on points of difference that might arise.

In June, 1910, the formal call for tenders was made by newspaper advertisement. In response, 35 different propositions were submitted, which were duly considered by the board, who, finally, after calling in advisory engineers, recommended the acceptance of an alternative design sent in by the St. Lawrence Bridge Company (with whom are associated the Dominion Bridge Company and the Canadian Bridge Company). This design the board considered to possess certain features of strength, simplification of erection, economical distribution of material, and general appearance which, in their opinion, would produce a bridge that "would compare most favourably with the highest type of long-span bridges in existence." By an Order in Council of March 31, 1911, authority was given for entrance into contract with the conjoined companies named, and such contract was executed under date April 4, 1911. The contract price is 9.02 cents a pound, aggregating about \$8,650,000, a saving of about \$2,600,000 having been effected by the elimination of the highways for vehicular traffic contemplated in the original design; the contract date for completion was December 31, 1915.

The bridge will have a total length of 3,228 feet, or about three-fifths of a mile. The centre span will be 1,800 feet long; the length of the suspended portion of it being 640 feet. This span will, for a length of 760 feet over the channel of the river, have a height of 150 feet between its lower members and the high water level of the river. The two cantilever arms will each be 580 feet long. The width of the bridge between trusses will be 88 feet. The bridge will comprise a double-track railway and two side-walks for foot passengers.

Under date January 10, 1910, a contract for the substructure was entered into with Messrs. M. P. and J. T. Davis, whose tender was the lowest of three obtained after newspaper advertisement calling for tenders; and supplementary agreements necessitated by changes in the caisson design and in the location of the north anchor pier, were made with them on May 23, 1910, and September 2, 1911.



8 GEORGE V, A. 1918

The Board of Engineers for reconstruction, as originally constituted, has been modified by retirements and death, and is at present composed as follows: Charles N. Monsarrat, M. Can. Soc. C.E., chairman and chief engineer; Ralph Modjeski, Am. Soc. C.E., and H. P. Borden, M. Can. Soc. C.E.

The headquarters of the board are in Montreal.

The report of the chairman and chief engineer for the year ended on March 31, 1917, will be found printed in the appendices hereto, Part V.

The report shows that during the year the whole structure was completed, including the suspended span which was erected at a point about 3 miles down the river. On the 11th of September, 1916, this span was floated up the river, and the operation of lifting it into place began and proceeded successfully until it had reached a height of about 20 feet above the water, when some portion of the contractor's erection equipment failed, with the result that the entire span tilted towards the west and disappeared into the river. The St. Lawrence Bridge Company assumed entire responsibility for the loss, and took immediate steps to replace the span at their own expense. At the close of the year fabrication had been going ahead rapidly.

An investigation was at once held by the board and officers of the company, and the board made a report on the accident, which will be found in Appendice V, p. 74.

The expenditure during the fiscal year ended March 31, 1917, was \$2,733,677, paid out of capital, making the total capital expenditure on the reconstruction of the bridge, \$13,244,583.84. Expenditure had previously been made from income, namely, for the year 1908-9, \$422,867.12 (in which is included the amount, \$355,279.07, paid for acquiring the stock of the Quebec Bridge and Railway Company, and \$31,765.44, the expenses of the commission of inquiry into the causes of the collapse of the old structure), and for the year 1909-10, \$111,788.02 for the preparation of plans, etc., or a total of \$534,655.14, against which there is credited the sum of \$100,000 paid in 1910 to the Government by the Phoenix Bridge Company, the contractors for the original superstructure, in the final adjustment of claims arising out of the collapse. The total net expenditure by this department up to March 31, 1917, after crediting the sum of \$91,188.10, the proceeds of the sale of scrap and unused material from the collapsed bridge, is \$13,679,238.98. This is irrespective of the amount of subsidy, \$274,353.33 paid to the Quebec Bridge Company as above mentioned, and of the amounts paid by the Finance Department, namely, for the guaranteed bonds of the company, \$6,424,781; to the province of Quebec, \$250,000; to the city of Quebec, \$300,000; and \$485.20, an award of the Supreme Court, in all \$6,975,266.20. Including these items the aggregate of all expenditure is \$21,028,858.51.

#### WELLAND SHIP CANAL.

This important work has for its object the affording of greater and better accommodation for a larger class of vessels than those that can be used on the present canal.

The present canal lies between Port Colborne, lake Erie, and Port Dalhousie,



## SESSIONAL PAPER No. 20

lake Ontario. Its length is  $26\frac{3}{4}$  miles, and comprises 25 lift locks, the dimensions of which are 270 feet by 45 feet, with a depth of 14 feet of water on the sills.

The proposed Welland ship canal as finally located follows the course of the present canal from Port Colborne on lake Erie to Allanburg, half-way across the peninsula. From this point an entirely new cutting is to be made, crossing the present canal just below lock No. 25, the water level of the two canals at this point being the same, viz.: 568 feet above sea-level. The new canal again crosses the present one below lock No. 11, the water of both canals at this point being at an elevation of 382 feet above sea-level.

The proposed canal enters lake Ontario at the mouth of the Ten Mile creek about three miles east of Port Dalhousie. The total length of canal from lake to lake is 25 miles; and the difference in level between the two lakes,  $325\frac{1}{2}$  feet, is to be overcome by seven lift locks, each having a lift of  $46\frac{1}{2}$  feet. The dimensions of the locks are to be 800 feet in length by 80 feet in width in the clear and with 30 feet of water over the mitre sills at extreme low stages in the lakes. The width of the canal at the bottom will be 200 feet and, for the present, the canal reaches will be excavated to a depth of 25 feet only, but all structures will be sunk to the 30-foot depth, so that the canal can be deepened at any future date by dredging out the reaches.

A new western breakwater will be built at Port Colborne to ensure quiet water in the harbour during storms.

The outer entrance piers in Lake Ontario will be placed about  $1\frac{1}{2}$  miles from shore, where the depth of water is 30 feet; a wide channel will be dredged out from these piers and an embankment formed on either side of it about 500 feet wide. The lock walls will be 82 feet high above the top of the gate sills.

The work is divided into 9 sections, of which section No. 1, approximately 3 miles, at the Lake Ontario end of the canal, was placed under contract on the 1st of August, 1913; section No. 2, approximately  $4\frac{1}{3}$  miles, was placed under contract on the 31st of December, 1913; section No. 3, approximately 2 miles, was placed under contract on the 4th of October, 1913; section No. 5 was placed under contract on the 22nd of December, 1913.

During the fiscal year 1916-17, the sum of \$3,513,769.82 was expended, making the total expenditure, \$13,474,333.26; to this is to be added for previous expenditure, for preliminary surveys, borings, etc., \$219,589.73, making the total cost up to the 31st of March, 1917, \$13,693,922.99.

In view of existing war conditions contract work on the canal has been suspended under notices served in January, 1917.

## SUBSIDIZED RAILWAYS.

Information as to subsidized railways is given in the statements of the accountant of the department, which will be found in the appendix hereto, Part I. The accountant's statements show all payments made since the beginning of the system of railway subsidies in the year 1883-84.

The total payments made on subsidy account during the year ended March 31, 1917, amounted to \$959,583.88, paid out of income.



8 GEORGE V, A. 1918

## BOARD OF RAILWAY COMMISSIONERS FOR CANADA.

By the Act 3, Edward VII, chapter 58 (1903), amending and consolidating the law respecting railways, the Railway Committee of the Privy Council was abolished, and in lieu thereof a Board of Commissioners, under the above title, was created, to consist of three members (increased to six by the Act of 1908, chapter 62), to be appointed by the Governor in Council; this Act was brought into force on February 1, 1904, by proclamation, on the authority of an Order in Council, dated January 18, 1904, which also appointed certain persons as commissioners. By the Act of 1908, chap. 61, the jurisdiction of the board was extended to cover the operation of telegraph and telephone lines, and by the Act of 1908, chapter 62, certain amendments were made to its constitution and otherwise. By the Act of 1909, chapter 31, the board was empowered to determine the maximum price to be charged for electricity developed through water-powers leased from the Crown. An Act of 1910, chapter 50, amended certain provisions of the Railway Act regarding the powers of the board, and the Act of the same year, chapter 57, extended the jurisdiction of the board to cover the fixing by it of the tariffs of wireless telegraph and marine electric telegraphs or cables. The Act of 1911, chapter 22, gave powers to the board to require from railway companies the establishment of a staff of fire-rangers, modified the previous enactments regarding the disposal of electricity developed through Government leased water-powers, and amongst other enactments, made provision for action, through the board, to ensure the efficient operation of subsidized railways. The office of the board is at Ottawa, though it is authorized to hold sessions in any part of Canada. Its decisions and orders are final, subject to appeal to the Supreme Court upon questions of jurisdiction or law, and also to action thereon by the Governor in Council, in his discretion.

It is required to make annually a report of its proceedings, which report is laid before Parliament. The report for the year ended March 31, 1917, has been received, and will be laid before Parliament in due course.

## CANALS.

The total expenditure on the Dominion canals for the twelve months ended March 31, 1917, was \$6,028,100.73, comprising \$4,304,589.09 charged to capital, \$399,414.50 charged to income, \$801,937.90 for staff, and \$522,159.24 for repairs; the last two items being charged to revenue.

The balance of rentals due on April 1, 1916, was \$153,055.38. The rentals accrued during the year amounted to \$275,206.99, making a total of \$428,262.37. Of this amount, there was collected during the year a total, after deducting abatements aggregating \$7,380.65, of \$271,820.28. The balance remaining due on March 31, 1917, was \$149,061.14. It should be observed that, as a general rule, rentals are payable in advance, this fact accounting, to a considerable extent, for the large amount of rental due at the end of each year.

The total revenue collected amounted to \$461,423.14, the balance being made up of wharfage dues, fines, etc., and a total of \$175,536.50 derived from the operation of the Port Colborne grain elevator on the Welland canal.



## SESSIONAL PAPER No. 20

No tolls have been charged on any of the Dominion canals since 1903-4.

Summaries of these expenditures and receipts will be found in the statements furnished by the accountant of the Department, printed in the appendices, Part I, of the present report.

The above figures relate to the fiscal year 1916-17, but very voluminous statistics relating to canal traffic, and various commercial statistics for the season of navigation of the year 1916, will be found in the "Canal Statistics," which are issued as a separate report.

## CANAL TRAFFIC.

The following features of the principal canal traffic during the season of 1916 will be of interest:—

On the Welland canal, 2,544,964 tons of freight were moved, a decrease of 516,048 tons. Of the total, 693,578 tons were agricultural products, and 265,563 tons were produce of the forest; of coal, 1,190,142 tons were carried; 2,544,964 tons were through freight, of which 2,045,343 tons passed eastward.

Of the through freight, Canadian vessels carried 1,682,826 tons, a decrease of 233,189 tons, and United States vessels 632,142 tons, a decrease of 292,902 tons.

The total through freight passed eastward and westward through this canal to United States ports was 203,407 tons, a decrease of 282,209 tons compared with the year of 1915.

The quantity of grain passed down the Welland and St. Lawrence canals to Montreal was 609,119 tons, a decrease of 510,008 tons, as compared with the previous year; no transshipments have been made at Ogdensburg since 1903.

On the St. Lawrence canals, 3,368,064 tons were moved, a decrease of 41,403 tons, of which 2,404,815 tons were eastbound through freight and 568,970 tons westbound freight; 660,555 tons were agricultural products, 1,688,304 tons coal, and 650,590 tons forest products.

On the Ottawa river canals, the total quantity of freight moved was 237,651 tons, a decrease of 34,719 tons, of which 139,168 tons were products of the forest.

On the Chambly canal, 398,977 tons were moved, a decrease of 16,501 tons, of which 242,654 tons were produce of the forest and 100,165 tons of coal.

On the Rideau canal, 105,430 tons were carried, a decrease of 15,351 tons; 9,912 tons being produce of the forest and 6,915 tons of coal.

On the St. Peters' canal, 9,629 tons were carried, an increase of 6,734 tons; 3,787 tons were coal. The canal was closed to public traffic, during the season of 1915, for the reconstruction of the lock and was opened on September 1, 1916.

On the Murray canal, 46,680 tons passed, an increase of 15,952 tons.

On the Trent canal, 45,009 tons were moved, a decrease of 4,895 tons, of which 38,841 tons were the produce of the forest.

On the St. Andrews lock, on the Red River, Manitoba, the volume of business was 13,438 tons.<sup>1</sup>

---

<sup>1</sup> This work, which consists of a lock and dam on the Red River, about fifteen miles north of Winnipeg, was built and is operated by the Department of Public Works. It affords communication between Winnipeg and lake Winnipeg. It is only mentioned here for statistical purposes.



8 GEORGE V, A. 1918

On the Sault Ste Marie canal, the total movement of freight was 16,813,649 tons, being an increase of 9,062,692 tons. There were 6,689 passages of vessels, the number of lockages being 4,777. Of wheat, 86,874,340 bushels, and of other grain, 46,096,508 bushels were carried; also 3,353,270 barrels of flour; 11,504,773 tons of iron ore; 1,033,647 tons of coal; and 6,333,600 feet, board measure, of lumber.

The principal facts of these statistics, summarized, are as follows:—

The total traffic through the several canals of the Dominion for the season of 1916 amounted to 23,583,491 tons, an increase of 8,384,688 tons compared with the previous year; 263,648 passengers were carried, an increase of 12,812.

The report of the chief engineer of the department, which will be found in Part III of the appendices, give comprehensive information as to the several works under his charge, the principal of which are the Hudson Bay railway, the Trent canal, the new Welland ship canal, and the terminals of the Intercolonial Railway near Halifax.

### RAILWAY STATISTICS.

The digest of the sworn statements of railway companies relating to their operations in Canada for the twelve months ended June 30, 1917, is prepared by the departmental comptroller of statistics, and is issued as a separate report.

### CANAL STATISTICS.

The traffic statistics of the Dominion canals for the season of navigation of 1916 are compiled under the direction of the same officer, and are also issued as a separate report.

I have the honour to be, sir,

Your obedient servant,

A. W. CAMPBELL,

*Deputy Minister.*



APPENDIX I

STATEMENTS OF THE ACCOUNTANT







## INDEX.

	Page.
I. General summary . . . . .	5
II. General statement of the expenditure on railways and canals, including Quebec bridge and railway subsidies, during the fiscal year ending March 31, 1917. . . . .	6
III. Statement showing the revenue received from the railways and the canals during the fiscal year ending March 31, 1917. . . . .	7
IV. Statement showing the expenditure of the canals during the fiscal year ending March 31, 1917. . . . .	8
V. Statement showing the expenditure of the railways during the fiscal year ending March 31, 1917. . . . .	9
VI. Statements showing the expenditure on the various canals as follows:—	
Capital . . . . .	10
Income . . . . .	11
Repairs. . . . .	12
Staff. . . . .	13
Summary of the expenditure on each of the canals . . . . .	14
Statement of the yearly expenditure and the revenue of the canals . . . . .	15
Statement of the canals revenue during the fiscal year. . . . .	16
Statement of hydraulic and other rents during fiscal year. . . . .	17
Statements of the yearly expenditure on the following works:—	
Welland Canal. . . . .	18
Welland Ship Canal. . . . .	18
Hudson Bay Railway. . . . .	19
Quebec Bridge. . . . .	19
VII. Statements showing the expenditure and revenue of the railways; as follows:—	
Capital . . . . .	20
Income. . . . .	20
Working expenses, including Improvements and Betterments on I.C.R. . . . .	21
Revenue received by the railways. . . . .	21
Expenditure common to both railways and canals "Income" . . . . .	21
Expenditure common to both railways and canals "Revenue" . . . . .	21
Recapitulation showing the expenditure and the revenue of the railways yearly. . . . .	22
General review of the total expenditure and revenue for the railways and canals. . . . .	23
VIII. Railway and bridge subsidies—	
I. Subsidies paid during the fiscal year. . . . .	25
II. Subsidies in general. . . . .	26 to 35







## SUMMARY.

GENERAL SUMMARY of the Expenditure and the Revenue for the fiscal year ending March 31, 1917, and previous years.

## EXPENDITURE.

	\$	cts.
Total expenditure for the year as per statements following pages 6 to 35 .....	48,226,082	40
Total expenditure on Railways for the year, including Quebec Bridge and Railway Subsidies.....	41,895,886	53
Total expenditure on Canals for the year.....	6,028,100	73
General expenditure common to both Railways and Canals, for the year.....	302,095	14

The grand total of the expenditure to March 31, 1917, on Railways and Canals, as shown on page 23 of this report, amounts to... 900,596,933 18

This expenditure is divided as follows:—

Grand total expenditure on Railways, including Quebec Bridge and Railway Subsidies.....	734,998,814	43
Grand total expenditure on Canals.....	164,140,734	44
Grand total general expenditure, common to both Railways and Canals.....	1,457,384	31

## REVENUE.

The revenue from both Railways and Canals, for the fiscal year amounts to.....	24,001,181	75
Revenue from the Railways.....	23,539,758	61
Revenue from the Canals.....	461,423	14
The grand total of the revenue to March 31, 1917, on Railways and Canals both amounts to (see page 23) ....	265,060,569	79
Grand total of the revenue from the Railways.....	248,395,298	47
Grand total of the revenue from the Canals, amounts to ....	16,665,271	32

The sundry classifications of the expenditure and the revenue are shown on pages 6, 7, 8 and 9 for the fiscal year; and page 23 for the expenditure previous to Confederation and since.

According to instructions, approved by Order in Council dated October 23, 1917, the annual report of the branch has been made as concise as possible. All statements of a statistical nature have been omitted, and for more complete information on the expenditure or revenue of any railway or canal the previous annual reports should be consulted.

DEPARTMENT OF RAILWAYS AND CANALS.

W. C. LITTLE,  
*Accountant.*



8 GEORGE V, A. 1918

## EXPENDITURE.

## GENERAL STATEMENT of Expenditure during the Year ending March 31, 1917.

	\$	cts.	\$	cts.
TOTAL EXPENDITURE—as per statements, pages 8 and 9.....			48,226,082	40
Expenditure chargeable to Railways.....	37,799,556	24		
"    "    Railways, General.....	403,069	41		
"    "    Quebec Bridge.....	2,733,677	00		
"    "    Railway Subsidies.....	359,583	88		
Total expenditure, Railways.....			41,895,886	53
Expenditure chargeable to Canals.....	5,862,881	83		
"    "    Canals, General....	165,218	90		
Total expenditure, Canals.....			6,028,100	73
General expenditure.....			302,095	14
Total expenditure.....			48,226,082	40
CLASSIFICATION OF EXPENDITURE IN GENERAL—				
Capital Account.....	19,041,915	79		
Revenue Account.....	27,124,003	68		
Income Account.....	1,100,579	05		
Consolidated Fund (railway subsidies) Income.....	959,583	88		
Total expenditure.....			48,226,082	40
CLASSIFICATION OF EXPENDITURE BY ACCOUNTS—				
<i>Railways—</i>				
Capital expenditure—Railways.....	12,003,649	70	12,003,649	70
Revenue expenditure—Railways.....	25,795,906	54		
"    "    Railways, General.....	4,000	00	25,799,906	54
Income expenditure—Railways, General.....			399,069	41
<i>Quebec Bridge—</i>				
Capital expenditure—Quebec Bridge.....	2,733,677	00	2,733,677	00
<i>Railway Subsidies—</i>				
Consolidated Fund—Railway Subsidies.....	959,583	88	959,583	88
Total expenditure, Railways, \$41,895,886.53.				
<i>Canals—</i>				
Capital expenditure—Canals.....	4,304,589	09	4,304,589	09
Income    "    Canals.....	372,102	96		
"    "    Canals, General.....	27,311	54	399,414	50
Revenue    "    Canals Staff.....	700,022	11		
"    "    Canals Staff, General.....	101,915	79		
"    "    Canals Repairs.....	486,167	67		
"    "    Canals Repairs, General.....	35,991	57	1,324,097	14
Total expenditure on Canals, \$6,028,100.73.				
General Expenditure—Income account.....			302,095	14
Total expenditure.....			48,226,082	40



SESSIONAL PAPER No. 20

## REVENUE.

GENERAL STATEMENT of the Revenue received during the Year ending  
March, 31 1917.

	\$	cts.	\$	cts.
TOTAL REVENUE RECEIVED DURING FISCAL YEAR.....			24,001,181	75
Revenue from Railways.....	23,539,758	61		
"    "    Canals.....	461,423	14		
Total revenue as above .....			24,001,181	75
STATEMENT OF REVENUE RECEIVED, IN DETAIL—				
Railways—				
Intercolonial Railway.....	16,767,386	89		
International Railway of New Brunswick.....	116,678	67		
National Transcontinental Railway.....	5,916,550	99		
New Brunswick and Prince Edward Island Railway .....	38,336	75		
Prince Edward Island Railway.....	630,045	69		
Total.....	23,468,998	99		
St. John & Quebec Ry. . . . .	70,759	62		
Total revenue from Railways.....			23,539,758	61
Canals—				
Welland Canal.....	68,277	37		
"    Elevator, Port Colborne. . . . .	175,536	50		
Welland Ship Canal.....	824	50		
Lachine Canal.....	141,476	75		
Beauharnois Canal.....	15,120	40		
Cornwall Canal.....	38,332	50		
Williamsburg Canal.....	2,944	74		
Soulanges Canal.....	3,609	00		
Chambly Canal.....	769	00		
Carillon and Grenville Canal.....	860	00		
Rideau.....	9,397	86		
Trent Canal.....	3,707	23		
St. Peters Canal. . . . .	2	00		
Sault Ste. Marie Canal.....	143	08		
Murray Canal . . . . .	218	00		
Ste. Anne's Lock and Canal.....	204	21	461,423	14
Total revenue received during fiscal year.....			24,001,181	75



8 GEORGE V, A. 1918

## EXPENDITURE on Canals for year ended March 31, 1917.

Name of Canals.	Chargeable to Capital.	Chargeable to Income.	Chargeable to Revenue.		Total Expendi- ture during year.
			Staff.	Repairs.	
	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.
Carillon and Grenville.....			26,235 56	16,914 51	43,150 07
Chambly .....	49,300 00		35,300 97	35,678 51	120,279 48
Cornwall .....		1,614 41	87,050 60	38,459 87	127,124 88
Lachine .....	24,073 21	175,000 00	100,803 96	95,423 01	395,300 18
Murray .....			5,656 45	4,076 73	9,733 18
Rideau .....	33,735 10	29,999 46	61,858 80	71,498 90	197,092 26
Sault Ste. Marie.....			28,047 09	24,223 18	52,270 27
Soulanges.....		1,493 07	35,664 97	24,402 39	61,560 43
St. Anne's Lock.....			3,958 16	4,459 01	8,417 17
St. Lawrence River and Canals—					
North Channel .....	48,955 31				48,955 31
St. Ours Lock.....			4,176 25	3,829 74	8,005 99
St. Peters.....		126,561 99	3,301 49	455 38	130,318 86
Trent.....	613,088 60	16,616 85	53,204 67	47,315 71	730,225 83
Welland .....		18,776 39	221,004 06	96,111 44	335,891 89
Welland Ship .....	3,513,769 82				3,513,769 82
Williamsburg—					
Galops .....	20,028 25				20,028 25
Rapide Plat.....	1,638 80				1,638 80
Williamsburg .....		2,040 79	33,759 08	23,319 29	59,119 16
	4,304,589 09	372,102 96	700,022 11	486,167 67	5,862,881 83
GENERAL ON CANALS.					
Dredge Vessels, Lachine.....				7,734 71	7,734 71
Dredge Vessels, Rideau.....				24,648 74	24,648 74
Miscellaneous .....			3,333 18	610 18	3,943 36
Statistical Officers.....			34,175 54		34,175 54
Sunday Labour.....			42,372 25		42,372 25
Surveys and Inspections.....		15,583 51			15,583 51
Quebec Canals—					
Dredging .....		7,218 16			7,218 16
Maintenance .....			19,134 82		19,134 82
Hungry Bay Dyke .....				3,002 94	3,002 94
Miscellaneous—					
Miscellaneous works not provided for.....		1,020 31			1,020 31
Civil Service Amendment Act .....		3,489 56			3,489 56
Compassionate allowances to families of deceased employees..			2,900 00		2,900 00
		27,311 54	101,915 79	35,991 57	165,218 90
Grand total .....	4,304,589 09	399,414 50	801,937 90	522,159 24	6,028,100 73



SESSIONAL PAPER No. 20

## EXPENDITURE on Railways for Year ended March 31, 1917.

Name of Railways.	Chargeable to Capital.	Chargeable to Income.	Chargeable to Revenue.	Total.
			Working Expenses.	
	\$ cts.	\$ cts.	\$ cts.	\$ cts.
Hudson Bay Railway .....	2,604,279 94			2,604,279 94
Intercolonial Railway .....	4,490,472 56		*15,653,357 78	20,143,830 34
" " Improvements and Betterments.....			1,070,334 64	1,070,334 64
International Railway of New Brunswick...	3,724 98		165,107 26	168,832 24
" " " " (Statutory) .....			90,000 00	90,000 00
National Transcontinental Railway Con- struction .....	122,328 33			122,328 33
National Transcontinental Railway Grain Elevator, Winnipeg.....	279,949 83			279,949 83
National Transcontinental Railway (Statu- tory) .....	3,514,308 04		7,806,922 20	11,321,230 24
New Brunswick and P.E.I. Ry.....	46,579 38		78,031 22	124,610 60
Prince Edward Island Ry.....	609,751 71		833,853 02	1,443,604 73
Quebec & Saguenay Ry.....	332,254 93			332,254 93
St. John & Quebec Ry.....			98,300 42	98,300 42
Total.....	\$12,003,649 70		25,795,906 54	37,799,556 24
Quebec Bridge.....	2,733,677 00			2,733,677 00
Railway Subsidies .....		959,583 88		959,583 88
GENERAL ON RAILWAYS.				
Enquiry and Report on the Railway Situation of Canada.....		72,233 74		72,233 74
Railway Commission—Maintenance.....		166,447 14		166,447 14
" " Statutory .....		49,500 00		49,500 00
Surveys and Inspections .....		44,149 09		44,149 09
Railway Grade Crossing Fund.....		46,630 53		46,630 53
Governor General's Cars, attendance, etc....		4,738 25		4,738 25
Grand Trunk Pacific Ry. Remuneration to Government Director. ....		666 66		666 66
Contribution to the International Association of Railways Congress.....		97 33		97 33
Expenses with Consolidation of the Railway Act .....		440 00		440 00
Contribution of the Government to the Fac- ulty of McGill University.....		2,500 00		2,500 00
Contribution of the Government to the Fac- ulty of the Polytechnic School, Montreal .....		2,500 00		2,500 00
Compassionate allowances to families of deceased employees.....			4,000 00	4,000 00
Continuous Audit on behalf of the Govern- ment of Canada .....		9,166 67		9,166 67
Total.....		399,069 41	4,000 00	403,069 41
Grand total.....	14,737,326 70	1,358,653 29	25,799,906 54	41,895,886 53
MISCELLANEOUS EXPENDITURE.				
War Appropriation .....		299,934 09		299,934 09
Cost of Litigation.....		2,161 05		2,161 05
Total .....		302,095 14		302,095 14
Grand Total on Railways and Canals, includ- ing Miscellaneous Expenditure.. ..	19,041,915 79	2,060,162 93	27,124,003 68	48,226,082 40

\*Amount includes rental of the Vale Railway at \$1,200 per annum.



8 GEORGE V, A. 1918

EXPENDITURE on Canals to March 31, 1917.  
(CAPITAL ACCOUNT.)

Canal.	Previous Years.		1916-17.		Total.	
	\$	cts.	\$	cts.	\$	cts.
Baie Verte.....						
Beauharnois.....	1,636,690	26			1,636,690	26
Carillon and Grenville .....	4,182,092	96			4,182,092	96
Chambly.....	731,696	52	49,300	00	780,996	52
Cornwall .. .....	7,246,304	21			7,246,304	21
Culbute Lock and Dam.....	382,391	46			382,391	46
Lachine.....	14,108,611	59	24,073	21	14,132,684	80
Lake St. Francis.....	75,906	71			75,906	71
Lake St. Louis.....	298,176	11			298,176	11
Murray.....	1,248,946	71			1,248,946	71
Rideau.....	4,168,069	21	33,735	10	4,201,804	31
Sault Ste. Marie .....	4,994,372	51			4,994,372	51
Soulanges.....	7,904,044	53			7,904,044	53
Ste. Anne's Lock and Canal .....	1,170,215	63			1,170,215	63
St. Lawrence River and Canals—						
North Channel.....	1,946,187	56	48,955	31	1,995,142	87
River Reaches .....	483,830	20			483,830	20
Galops Channel.....	1,039,895	65			1,039,895	65
St. Ours Lock .. .....	127,228	56			127,228	56
St. Peter's.....	648,547	14			648,547	14
Tay .....	489,599	23			489,599	23
Trent.....	15,626,295	14	613,088	60	16,239,383	74
Welland.....	29,399,405	93			29,399,405	93
Welland Ship.....	10,180,153	17	3,513,769	82	13,693,922	99
Williamsburg.....	1,334,551	80			1,334,551	80
Farran's Point.....	877,090	57			877,090	57
Galops .....	6,121,213	70	20,028	25	6,141,241	95
Rapide Plat.....	2,158,242	00	1,638	80	2,159,880	80
Total .....	118,579,759	06	4,304,589	09	122,884,348	15
Canals General .. .....	34,966	69			34,966	69
Grand Total.....	118,614,725	75	4,304,589	09	122,919,314	84



SESSIONAL PAPER No. 20

EXPENDITURE on Canals to March 31, 1917.  
INCOME ACCOUNT.

Canals.	Previous Years.	1916-17.	Total.
	\$ cts.	\$ cts.	\$ cts.
Baie Verte .....	44,387 53	.....	44,387 53
Beauharnois.....	265,810 84	.....	265,810 84
Carillon and Grenville... ..	351,431 74	.....	351,431 74
Chambly.....	759,574 15	.....	759,574 15
Cornwall.....	592,038 21	1,614 41	593,652 62
Culbute Lock and dam.....	60,923 37	.....	60,923 37
Lachine.....	1,420,902 70	175,000 00	1,595,902 70
Lake St. Francis.....	25,043 68	.....	25,043 68
Lake St. Louis.....	.....	.....	.....
Murray.....	101,423 11	.....	101,423 11
Rideau .....	646,832 76	29,999 46	676,832 22
Sault Ste. Marie.....	280,098 04	.....	280,098 04
Soulanges.....	157,574 35	1,493 07	159,067 42
St. Anne's Lock and Canal.....	84,044 81	.....	84,044 81
St. Lawrence River and Canals.....	128,298 11	.....	128,298 11
St. Ours Lock.....	174,028 88	.....	174,028 88
St. Peters.....	534,991 54	126,561 99	661,553 53
Tay.....	748 65	.....	748 65
Trent.....	924,169 46	16,616 85	940,786 31
Welland.....	1,541,620 07	18,776 39	1,560,396 46
Welland Ship.....	.....	.....	.....
Williamsburg.....	297,559 36	2,040 79	299,600 15
Total.....	8,391,501 36	372,102 96	8,763,604 32
Canals, General.....	618,073 56	27,311 54	645,385 10
Grand Total.....	9,009,574 92	399,414 50	9,408,989 42



EXPENDITURE on Canals to March 31, 1917.  
REVENUE ACCOUNT --- (REPAIRS.)

Canals.	Previous Years.	1916-17.	Total.
	\$ cts.	\$ cts.	\$ cts.
Baie Verte.....			
Beauharnois .....	525,691 23		525,691 23
Carillon and Grenville .....	560,414 40	16,914 51	577,328 91
Chambly.....	907,558 79	35,678 51	943,237 30
Cornwall.....	956,094 27	38,459 87	994,554 14
Culbute Lock and Dam.....	7,036 15		7,036 15
Lachine.....	2,012,065 75	95,423 01	2,107,488 76
Lake St. Francis.....			
Lake St. Louis. ....			
Murray.....	97,161 44	4,076 73	101,238 17
Rideau.....	1,696,166 44	71,498 90	1,767,665 34
Sault Ste. Marie.....	349,935 99	24,223 18	374,159 17
Soulanges.....	437,547 11	24,402 39	461,949 50
Ste. Anne's Lock. ....	138,282 62	4,459 01	142,741 63
St. Lawrence River and Canals .....			
St. Ours Lock .....	97,193 02	3,829 74	101,022 76
St. Peters.....	35,968 17	455 38	36,423 55
Tay.....			
Trent.....	674,369 76	47,315 71	721,685 47
Welland.....	3,628,473 42	96,111 44	3,724,584 86
Welland Ship .....			
Williamsburg.....	593,523 49	23,319 29	616,842 78
Total.....	12,717,482 05	486,167 67	13,203,649 72
Canals, General.....	478,266 04	35,991 57	514,257 61
Grand total .....	13,195,748 09	522,159 24	13,717,907 33



SESSIONAL PAPER No. 20

EXPENDITURE on Canals to March 31, 1917.  
REVENUE ACCOUNT—(Staff).

Canals.	Previous Years.	1916-17.	Total.
	\$ cts.	\$ cts.	\$ cts.
Baie Verte.....			
Beauharnois.....	649,574 89		649,574 89
Carillon and Grenville.....	788,478 60	26,235 56	814,714 16
Chambly.....	946,844 80	35,300 97	982,145 77
Cornwall.....	1,554,282 74	87,050 60	1,641,333 34
Culbute Lock and Dam.....	11,507 48		11,507 48
Lachine.....	2,662,536 68	100,803 96	2,763,340 64
Lake St. Francis.....			
Lake St. Louis.....			
Murray.....	133,983 99	5,656 45	139,640 44
Rideau.....	1,665,890 89	61,858 80	1,727,749 69
Sault Ste. Marie.....	397,825 51	28,047 09	425,872 60
Soulanges.....	504,256 13	35,664 97	539,921 10
Ste. Anne's Lock.....	112,047 47	3,958 16	116,005 63
St. Lawrence River and Canals.....			
St. Ours Lock.....	114,324 51	4,176 25	118,500 76
St. Peter's.....	113,161 44	3,301 49	116,462 93
Tay.....			
Trent.....	522,515 82	53,204 67	575,720 49
Welland.....	4,615,861 25	221,004 06	4,836,865 31
Welland Ship.....			
Williamsburg.....	620,819 79	33,759 08	654,578 87
Total.....	15,413,911 99	700,022 11	16,113,934 10
Canals, General.....	1,878,672 96	101,915 79	1,980,588 75
Grand Total.....	17,292,584 95	801,937 90	18,094,522 85



TOTAL EXPENDITURE by Canal to March 31, 1917.

Canals.	Capital.	Income.	Revenue.		Totals.
			Staff.	Repairs.	
	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.
Baie Verte .....		41,387 53			44,387 53
Beauharnois .....	1,636,690 26	265,810 84	649,574 89	525,691 23	3,077,767 22
Carillon and Grenville.....	4,182,092 96	351,431 74	814,714 16	577,328 91	5,925,567 77
Chambly .....	780,996 52	759,574 15	982,145 77	943,237 30	3,465,953 74
Cornwall .....	7,246,304 21	593,652 62	1,611,333 34	994,554 14	10,475,844 31
Culbute Lock.....	382,391 46	60,923 37	11,507 48	7,036 15	461,858 46
Lachine.....	14,132 684 80	1,595,902 70	2,763,340 64	2,107,488 76	20,599,416 90
Lake St. Francis .....	75,906 71	25,043 68			100,950 39
Lake St. Louis.....	298,176 11				298,176 11
Murray.....	1,248,946 71	101,423 11	139,640 44	101,238 17	1,591,248 43
Rideau .....	4,201,804 31	676,832 22	1,727,749 69	1,767,665 34	8,374,051 56
Sault Ste. Marie .....	4,994,372 51	280,098 04	425,872 60	374,159 17	6,074,502 32
Soulanges .....	7,904,044 53	159,067 42	539,921 10	461,949 50	9,064,982 55
Ste. Anne's Lock.....	1,170,215 63	84,044 81	116,005 63	142,741 63	1,513,007 70
St. Lawrence River & Canals	3,518,868 72	128,298 11			3,647,166 83
St. Ours Lock .....	127,228 56	174,028 88	118,500 76	101,022 76	520,780 96
St. Peters .....	648,547 14	661,553 53	116,462 93	36,423 55	1,462,987 15
Tay .....	489,599 23	748 65			490,347 88
Trent .....	16,239,383 74	940,786 31	575,720 49	721,685 47	18,477,576 01
Welland.....	29,399,405 93	1,560,396 46	4,836,865 31	3,724,584 86	39,521,252 56
Welland Ship.....	13,693,922 99				13,693,922 99
Williamsburg .....	1,334,551 80				
"    Farran's Point.	877,090 57	299,600 15	654,578 87	616,842 78	12,083,786 92
"    Galops .....	6,141,241 95				
"    Rapide Plat....	2,159,880 80				
Total .....	122,884,348 15	8,763,604 32	16,113,934 10	13,203,649 72	160,965,536 29
Expenditure, Canals General.	34,966 69	645,385 10	1,980,588 75	514,257 61	3,175,198 15
Grand total expenditure .....	122,919,314 84	9,408,989 42	18,094,522 85	13,717,907 33	164,140,734 44



	Year ending.	Capital.	Income.	REVENUE.		Revenue received.
				Staff.	Repairs.	
		\$ cts.	\$ cts.	\$ cts.	\$ cts	\$ cts.
Government expenditure prior to confederation, including Imperial Government expenditure.....		20,593,866 13	98,378 46	....	.....	.....
Government expenditure 1868 to 1879 included.....		17,004,842 55	515,196 21	1,830,398 92	1,832,998 61	5,079,068 36
Govt. expenditure since.....	1880	2,123,366 34	.....	195,039 33	147,167 52	341,598 14
" " ..	1881	2,075,891 65	7,246 69	197,573 62	154,653 63	361,558 17
" " ..	1882	1,593,174 09	55,025 03	224,572 61	187,399 02	325,231 54
" " ..	1883	1,763,001 97	62,503 14	269,415 01	178,617 86	361,604 01
" " ..	1884	1,577,295 42	60,993 99	280,657 29	192,219 38	372,561 69
" " ..	1885	1,504,621 47	58,298 29	280,226 20	201,708 47	321,289 47
" " ..	1886	1,333,324 80	31,984 02	282,323 63	198,251 97	328,977 43
" " ..	1887	1,783,698 16	65,983 66	285,172 62	198,888 84	321,784 88
" " ..	1888	1,033,118 34	120,561 59	292,458 76	201,928 93	317,902 04
" " ..	1889	972,918 43	162,015 49	301,040 23	240,261 36	333,188 90
" " ..	1890	1,026,364 24	146,853 54	290,516 63	176,089 00	354,816 92
" " ..	1891	1,318,092 15	165,843 87	294,562 12	204,768 45	349,431 90
" " ..	1892	1,437,149 30	194,129 61	293,115 58	231,089 54	324,475 24
" " ..	1893	2,069,573 30	196,185 84	291,048 97	204,759 39	357,089 87
" " ..	1894	3,027,164 19	110,512 07	294,446 34	179,630 13	387,788 97
" " ..	1895	2,452,273 65	216,057 58	281,477 04	164,033 71	339,890 49
" " ..	1896	2,258,778 97	85,820 49	292,121 05	209,321 60	339,538 72
" " ..	1897	2,348,636 91	101,205 74	287,970 36	178,385 47	384,780 53
" " ..	1898	3,207,249 79	82,400 55	280,872 44	203,478 86	407,652 81
" " ..	1899	3,899,877 31	82,205 60	280,628 57	202,312 36	369,044 38
" " ..	1900	2,639,564 93	120,653 93	292,609 24	227,626 97	322,642 86
" " ..	1901	2,360,569 89	135,500 57	314,095 04	262,876 07	315,425 69
" " ..	1902	2,114,689 88	213,044 91	317,838 61	263,768 27	300,413 68
" " ..	1903	1,823,273 61	275,103 58	390,281 82	294,113 92	230,213 15
" " ..	1904	1,880,787 20	298,678 23	381,016 82	350,278 54	+ 79,536 51
" " ..	1905	2,071,593 72	352,855 43	431,499 60	401,742 79	78,009 21
" " ..	1906	1,552,121 21	310,716 70	447,962 92	375,889 60	108,067 76
" " ..	1907	887,838 61	254,423 18	329,629 63	287,231 03	105,003 15
" " ..	1908	1,708,156 37	483,250 11	473,638 95	411,660 53	144,882 13
" " ..	1909	1,868,834 45	699,304 73	475,515 04	433,958 10	199,501 26
" " ..	1910	1,650,706 64	459,835 62	515,585 16	491,793 02	193,384 28
" " ..	1911	2,349,474 49	385,534 55	511,305 94	471,530 32	221,138 49
" " ..	1912	2,554,938 91	384,860 73	585,899 54	555,709 95	264,114 48
" " ..	1913	2,255,448 21	292,960 26	605,248 57	535,135 66	307,567 66
" " ..	1914	2,824,536 79	351,397 24	642,844 68	574,038 68	380,188 06
" " ..	1915	5,490,796 03	405,806 32	675,770 67	562,599 27	427,763 14
" " ..	1916	6,142,148 96	348,174 41	697,532 44	529,565 23	446,722 21
" " ..	1917	4,304,589 09	372,102 96	700,022 11	486,167 67	461,423 14
*Total.....	..					

† Canal tolls abolished this year.



CANALS REVENUE received during year ending March 31, 1917.

Collection Division.	Wharfage, Storage, Harbour Dues, etc.	Hydraulic and other Rents.	Total.
	\$ cts.	\$ cts.	\$ cts.
<i>Welland Canal</i> .....		404 00	404 00
Port Colborne.....	50 10	9,268 40	9,318 50
Port Colborne Elevator....	175,536 50		175,536 50
Port Dalhousie.....	516 65	58,038 22	58,554 87
Totals.....	176,103 25	67,710 62	243,813 87
<i>Welland Ship Canal</i> .....		824 50	824 50
<i>St. Lawrence Canals—</i>			
Coteau Landing (Beauharnois Canal).....		15,120 40	15,120 40
" " (Soulanges Canal).....	77 00	3,532 00	3,609 00
Cornwall.....		38,332 50	38,332 50
Cardinal—Williamsburg Canal.....	570 74	2,374 00	2,944 74
Lachine Canal (Montreal).....	11,767 20	129,151 09	140,918 29
" " (Lachine).....	558 46		558 46
Totals.....	12,973 40	188,509 99	201,483 39
<i>Chambly Canal</i> .....		621 00	621 00
Chambly.....		56 00	56 00
St. John's.....		32 00	32 00
St. Ours Lock.....		60 00	60 00
Totals.....		769 00	769 00
<i>Ottawa River Canals—</i>			
Carillon & Grenville Canal ..		192 00	192 00
" " Grenville.....	8 00	20 00	28 00
" " Carillon.....		640 00	640 00
Ste. Anne's Lock....	52 21	152 00	204 21
Totals .....	60 21	1,004 00	1,064 21
<i>Rideau Canal</i> .....		1,923 00	1,923 00
Ottawa .....	311 00	3,473 41	3,784 41
Kingston Mills.....		411 00	411 00
Smiths Falls .....	95 00	3,184 45	3,279 45
Totals.....	406 00	8,991 86	9,397 86
<i>St. Peter's Canal</i> .....		2 00	2 00
<i>Murray Canal</i> ..		218 00	218 00
<i>Trent Canal</i> .....	60 00	3,647 23	3,707 23
<i>Sault Ste. Marie Canal</i> .....		143 08	143 08
Grand totals.....	189,602 86	271,820 28	461,423 14
Net amount deposited to the credit of the Receiver General.....			461,423 14



SESSIONAL PAPER No. 20

HYDRAULIC AND OTHER RENTS, showing rent accrued, paid, and balances due March 31, 1917.

Balance due April 1, 1916.	Hydraulic and other rents accrued 1916 17.	Lock House rents.	Totals.	Canals.	Abatement for overcharges.	Deposited to the credit of the Receiver General.		Balance due March 31, 1917	Totals.	
						Lock House Rents.	Hydraulic Rents, etc.			
\$	cts.	\$	cts.		\$	cts.	\$	cts.	\$	cts.
63,424 52	62,021 66	404 00	125,850 18	Welland .....	150 00	67,306 62	57,989 56	125,850 18		
264 00	942 00	174 50	1,380 50	Welland Ship.....		650 00	556 00	1,380 50		
10,384 17	5,505 50	216, 00	16,105 67	Williamsburg.....	4,471 00	2,158 00	9,260 67	16,105 67		
14,096 10	25,661 50		39,757 60	Cornwall .....			1,425 10	39,757 60		
6,650 84	14,816 15		21,466 99	Beauharnois.....	577 50		5,769 09	21,466 99		
28,999 40	132,027 41	204 00	161,230 81	Lachine.....	1,446 95	204 00	30,632 77	161,230 81		
722 84	126 00	681 00	1,529 84	Chambly.....		681 00	760 84	1,529 84		
6,717 13	7,268 04	1,923 00	15,908 17	Rideau.....	165 78	1,923 00	6,750 53	15,908 17		
330 30	16,755 23	1,250 00	18,335 53	Trent.....	222 50	1,250 00	14,465 80	18,335 53		
60 00	490 00		550 00	Sault Ste. Marie ..	346 92		60 00	550 00		
21,400 08	643 00	192 00	22,235 08	Carillon & Grenville .....		192 00	21,383 08	22,235 08		
	3,136 00	396 00	3,532 00	Soulanges.....		396 00	3,136 00	3,532 00		
4 00	32 00	120 00	156 00	Ste. Anne's Lock.....		120 00	4 00	156 00		
	1 00		1 00	Chats Falls.....			1 00	1 00		
	2 00		2 00	St. Peter's.....				2 00		
2 00	9 00	210 00	221 00	Murray.....		210 00	3 00	221 00		
153,055 38	269,436 49	5,770 50	428,262 37	Totals .....	7,380 65	5,770 50	149,061 44	428,262 37		



8 GEORGE V, A. 1918

WELLAND CANAL.—Amounts Expended on Construction.

	Capital.
	\$ cts.
Expenditure to March 31, 1916.....	29,618,995 66
Expenditure, 1917.....	
Total.....	29,618,995 66
Less amounts transferred to Welland Ship Canal.....	219,589 73
Net amount of expenditure.....	29,399,405 93

WELLAND SHIP CANAL.—Amounts expended on Construction.

	Year Ending.	Capital.
		\$ cts.
Expenditure.....	1914	994,257 60
“.....	1915	4,074,200 69
“.....	1916	4,892,105 15
“.....	1917	3,513,769 82
Total.....		13,474,333 26

Expenditure as above.....	\$13,474,333 26
To which add the preliminary expenditure for surveys, borings, etc., charged to Welland Canal capital as follows:—	
1905-06.....	\$ 13,231 97
1906-07.....	10,825 27
1907-08.....	8,300 34
1908-09.....	19,993 37
1909-10.....	9,979 91
1910-11.....	21,229 35
1911-12.....	23,138 60
1912-13.....	112,890 92
	219,589 73
Total cost of Welland Ship Canal to March 31, 1917.....	\$13,693,922 99



SESSIONAL PAPER No. 20

HUDSON BAY RAILWAY.—Amounts Expended on Construction.

	Year.	Capital.
		\$ cts.
Government Expenditure since Confederation.....	1909	92,427 83
“ “ “ .....	1910	53,042 63
“ “ “ .....	1911	184,149 81
“ “ “ .....	1912	159,632 00
“ “ “ .....	1913	1,099,063 15
“ “ “ .....	1914	4,498,717 25
“ “ “ .....	1915	4,773,743 99
“ “ “ .....	1916	4,889,131 77
“ “ “ .....	1917	2,604,279 94
Total to March 31, 1917.....		18,354,188 37

QUEBEC BRIDGE.—Amounts Expended on Construction.

	Year.	Capital.	Income.
		\$ cts.	\$ cts.
Government Expenditure .....	1909		422,867 12
“ “ .....	1910		111,788 02
“ “ .....	1911	227,563 40	
“ “ .....	1912	603,293 07	
“ “ .....	1913	1,512,825 96	
“ “ .....	1914	2,604,105 61	
“ “ .....	1915	2,816,305 10	
“ “ .....	1916	2,746,813 70	
“ “ .....	1917	2,733,677 00	
Total.....		13,244,583 84	534,655 14
Less amount received from the Phoenix Bridge Co. 1910.....			100,000 00
Total to March 31, 1917.....		13,244,583 84	434,655 14

Capital Expenditure as above.....	\$	13,244,583 84
In this expenditure a total of \$91,188.10 has been credited, being received for the sale of scrap and used material from the collapsed bridge.		
Add amounts paid by the Finance Department not included above :—		
Amount guaranteed by Act of 1903, Chap. 54.....	\$6,424,781 00	
Amount paid to the Province of Quebec .....	250,000 00	
Amount paid to City of Quebec .....	300,000 00	
Amount paid to Emile Tanguay, as per Supreme Court award.....	485 20	6,975,266 20
	\$	20,219,850 04
Less amount received from the Phoenix Bridge Co.....		100,000 00
Agrees with Public Accounts Balance Sheet, 1917.....	\$	20,119,850 04
To which add the expenditure under Income, 1909 and 1910.....	\$	534,655 14
Add also amount paid for subsidies in 1901, 1902 and 1903.....		374,353 33
		909,008 47
Total expenditure to date of March 31, 1917 .....	\$21,028,858 51	



8 GEORGE V, A. 1918

EXPENDITURE on the Canadian Government Railways to March 31, 1917.

CAPITAL ACCOUNT.

Railways.	Previous Years. to 1916-17.	1916-17.	Total.
	\$ cts.	\$ cts.	\$ cts.
Intercolonial Ry. System as follows:—			
Canada Eastern.....	819,000.00	.....	819,000.00
Cape Breton Ry.....	3,860,679.14	.....	3,860,679.14
Drummond County Ry.....	1,464,000.00	.....	1,464,000.00
Eastern Extension Ry.....	1,324,042.81	.....	1,324,042.81
Intercolonial Ry.....	106,015,832.36	4,490,472.56	110,506,304.92
Montreal & European Short line.....	333,942.72	.....	333,942.72
Oxford & New Glasgow Ry.....	1,949,063.21	.....	1,949,063.21
Total.....	115,766,560.24	4,490,472.56	120,257,032.80
<i>a</i> European & North American Ry.....	88,363.18	.....	88,363.18
<i>a</i> Nova Scotia Ry.....	208,509.72	.....	208,509.72
International Ry of New Brunswick.....	3,937.47	3,724.98	7,662.45
Prince Edward Island Ry.....	10,841,372.44	609,751.71	11,451,124.15
New Brunswick & P. E. I. Ry.....	224,211.28	46,579.38	270,790.66
<i>b</i> Quebec & Saguenay Ry.....	.....	332,254.93	332,254.93
Hudson Bay Ry.....	15,749,908.43	2,604,279.94	18,354,188.37
National Transcontinental Ry.....	159,881,197.46	3,916,586.20	163,797,783.66
Annapolis and Digby.....	660,683.09	.....	660,683.09
Canadian Pacific Ry.....	62,789,776.09	.....	62,789,776.09
<i>c</i> Carleton Branch Ry.....	48,410.48	.....	48,410.48
Yukon Territory Works;—Stikine Teslin Ry.....	283,323.55	.....	283,323.55
Governor General's Cars.....	71,538.82	.....	71,538.82
Miscellaneous Expenditure.....	18,000.00	.....	18,000.00
Total on Railways.....	366,635,792.25	12,003,649.70	378,639,441.95
<i>b</i> Quebec Bridge.....	10,510,906.84	2,733,677.00	13,244,583.84
Total.....	377,146,699.09	14,737,326.70	391,884,025.79

*a*—Amount paid on this line between 1868 and 1873 included was transfered to Consolidated Fund.  
*b*—See Special Statement page 19.  
*c*—This Railway which cost \$88,410.48 was sold in 1893 to the City of St. John, N. B., for \$40,000.00 (Vict. Cap. 6).

EXPENDITURE on the Canadian Government Railways to March 31, 1917.

INCOME ACCOUNT.

Railways.	Previous to 1916-17.	1916-17.	Total.
	\$ cts.	\$ cts.	\$ cts.
Annapolis and Digby Ry.....	8,381.82	.....	8,381.82
Intercolonial Ry.....	280,000.00	.....	280,000.00
Miscellaneous expenditure.....	3,281,398.20	399,069.41	3,680,467.61
Total.....	3,569,780.02	399,069.41	3,968,849.43
Quebec Bridge.....	434,655.14	.....	434,655.14
	4,004,435.16	399,069.41	4,403,504.57



8 GEORGE V, A. 1918

EXPENDITURE on the Canadian Government Railways to March 31, 1917.

REVENUE ACCOUNT—WORKING EXPENSES.

Railways.	Previous to 1916-17.	1916-17.	Total.
	\$ cts.	\$ cts.	\$ cts.
Canadian Pacific Ry.....	318,216 30	.....	318,216 30
Eastern Extension Ry.....	538,094 06	.....	538,094 06
*Intercolonial Ry.....	217,866,649 49	15,653,357 78	233,520,007 27
Intercolonial Ry., Improvements and Betterments....	1,515,895 57	1,070,334 64	2,586,230 21
International Ry. of New Brunswick.....	318,357 73	255,107 26	573,464 99
New Brunswick and Prince Edward Island Ry.....	130,973 46	78,031 22	209,004 68
National Transcontinental Ry.....	4,744,130 10	7,806,922 20	12,551,052 30
Prince Edward Island Ry.....	12,156,003 50	833,853 02	12,989,856 52
St. John and Quebec Ry.....	115,451 88	98,300 42	213,752 30
Miscellaneous expenditure.....	90,189 97	4,000 00	94,189 97
	237,793,962 06	25,799,906 54	263,593,868 60

\* Including expenditure on the Baie des Chaleurs Railway in 1897, amounting to \$18,679 97.

REVENUE Received by the Canadian Government Railways to March 31, 1917.

Railways.	Previous to 1916-17.	1916-17.	Total.
	\$ cts.	\$ cts.	\$ cts.
Canadian Pacific Ry.....	396,473 75	.....	396,473 75
Eastern Extension Ry.....	462,465 68	.....	462,465 68
Intercolonial Ry.....	211,169,540 78	16,767,386 89	227,936,927 67
International Ry. of New Brunswick.....	170,092 41	116,678 67	286,771 08
New Brunswick and Prince Edward Island Ry. ....	75,834 15	38,336 75	114,170 90
National Transcontinental Ry.....	3,956,235 05	5,916,550 99	9,872,786 04
Prince Edward Island Ry. ....	8,518,415 60	630,045 69	9,178,461 29
St. John and Quebec Ry.....	76,482 44	70,759 62	147,242 06
	224,855,539 86	23,539,758 61	248,395,298 47

EXPENDITURE common to both Railways and Canals to March 31, 1917.

INCOME ACCOUNT.

Expenditure previous to 1916-17.....	\$ 1,085,578 12
Expenditure during 1916-17.....	\$ 302,095 14
	\$ 1,387,673 26

EXPENDITURE common to both Railways and Canals to March 31, 1917.

REVENUE ACCOUNT.

	Previous to 1916-17.	1916-17.	Total.
	\$ cts.	\$ cts.	\$ cts.
Expenditure.....	69,711 05	.....	69,711 05



RECAPITULATION—GOVERNMENT RAILWAYS.  
EXPENDITURE and Revenue to March 31, 1917.

	Year.	Capital.	Revenue.		Revenue received.
			Improvements and Betterments.	Working expenses.	
		\$ cts.	\$ cts.	\$ cts.	\$ cts.
Expenditure prior to Confederation.....		13,881,460 65			
Since Confederation.....	1868	483,353 65		359,961 08	420,752 58
"	1869	282,615 18		387,548 47	455,022 76
"	1870	1,729,381 49		445,208 75	471,245 09
"	1871	2,946,930 45		442,993 31	565,713 52
"	1872	5,620,569 67		595,076 22	622,900 56
"	1873	5,763,268 81		1,011,892 60	703,458 26
"	1874	3,925,123 69		1,847,925 24	893,430 17
"	1875	5,018,427 85		1,581,934 24	886,087 42
"	1876	4,497,434 75		1,497,128 22	966,922 42
"	1877	3,209,502 16		1,890,268 80	1,285,110 27
"	1878	2,643,741 73		2,032,873 05	1,514,846 38
"	1879	2,507,053 71		2,233,496 34	1,419,955 60
"	1880	6,109,077 14		1,851,489 26	1,739,137 25
"	1881	5,577,236 73		2,220,421 39	2,200,486 25
"	1882	5,175,046 61		2,310,638 54	2,237,583 39
"	1883	11,707,619 02		2,636,551 70	2,541,205 41
"	1884	14,013,074 89		2,613,508 87	2,551,937 97
"	1885	11,224,244 54		2,749,710 53	2,624,243 07
"	1886	4,443,220 17		2,819,973 50	2,629,336 35
"	1887	1,846,887 18		3,152,650 40	2,840,747 88
"	1888	1,765,582 11		3,621,076 62	3,166,253 22
"	1889	2,709,857 37		3,513,063 67	3,167,542 67
"	1890	2,392,767 99		3,846,044 42	3,203,874 11
"	1891	1,184,317 34		3,949,263 73	3,181,888 56
"	1892	417,425 73		3,748,597 77	3,136,393 51
"	1893	712,917 44		3,288,629 62	3,262,505 62
"	1894	585,749 01		3,226,208 13	3,179,019 57
"	1895	376,814 83		3,197,846 17	3,129,450 37
"	1896	324,774 72		3,254,442 64	3,140,678 47
"	1897	204,624 31		3,195,959 58	3,060,074 38
"	1898	270,990 85		3,507,248 88	3,313,847 10
"	1899	1,112,348 47		3,696,612 31	3,940,570 11
"	1900	3,309,130 42		4,665,228 06	4,774,161 87
"	1901	3,922,989 37		5,739,051 54	5,213,381 24
"	1902	5,386,611 24		5,861,099 54	5,918,990 43
"	1903	3,083,680 86		6,474,134 20	6,584,598 77
"	1904	2,619,059 86		7,599,958 57	6,627,255 51
"	1905	6,125,481 79		8,906,154 35	7,050,892 11
"	1906	6,102,565 74		7,893,653 49	7,950,552 97
"	1907	7,174,370 17		7,328,745 65	6,509,186 49
"	1908	23,684,005 25		9,595,295 43	9,534,569 04
"	1909	29,414,227 34		9,764,586 51	8,894,420 42
"	1910	21,505,975 91		9,095,903 96	9,647,963 71
"	1911	24,532,466 18		10,037,878 77	10,249,394 38
"	1912	23,108,805 52		11,074,852 80	11,034,165 83
"	1913	17,375,968 10		12,499,925 65	12,442,203 46
"	1914	21,628,095 15		13,559,225 45	13,394,317 37
"	1915	21,865,663 92		12,474,453 85	12,149,357 32
"	1916	21,155,255 19	1,515,895 57	17,891,484 65	18,427,908 65
"	1917	12,003,649 70	1,070,334 64	24,725,571 90	23,539,758 61
Total .....		*378,661,441 95	2,586,230 21	260,913,448 42	248,395,298 47

Total amount paid on construction..... S378,661,441 95  
Less amount received from the city of St. John, N.B., as purchase price of the  
Carleton Branch Railway ..... 40,000 00  
Cost of construction. .... + S378,621,441 95

\* Amount paid for Quebec Bridge not included.



## SESSIONAL PAPER No. 20

TOTAL EXPENDITURE and Revenue of the Department of Railways and Canals prior to and since Confederation to March 31, 1917.

	\$	cts.	\$	cts.
TOTAL EXPENDITURE .....			900,596,933	18
Expenditure on Railways .....	646,202,159	98		
"    Quebec Bridge .....	13,679,238	98		
"    Railway subsidies .....	75,117,415	47		
"    Canals .....	164,140,734	44		
"    Miscellaneous .....	1,457,384	31		
Total expenditure .....			900,596,933	18
CLASSIFICATION OF EXPENDITURE IN GENERAL—				
Capital account .....	514,803,340	63		
Revenue account .....	295,476,009	83		
Income account .....	15,200,362	25		
Consolidated fund—Railway subsidies, pages 25 to 35 .....	75,117,415	47	900,596,933	18
CLASSIFICATION OF EXPENDITURE IN DETAIL—				
Railways—				
Capital—See page 20 .....	378,639,441	95		
Income—See page 20 .....	3,968,849	43		
Revenue—See page 21 .....	263,593,868	60		
Total .....			646,202,159	98
Quebec Bridge—				
Capital—See page 19 .....	13,244,583	84		
Income—See page 19 .....	434,655	14		
Total .....			13,679,238	98
Railway Subsidies—See pages 25 to 35 .....	75,117,415	47		
Total on railways \$734,998,814.43.			75,117,415	47
Canals—				
Capital—See pages 14 and 15 .....	122,919,314	84		
Income—See pages 14 and 15 .....	9,408,989	42		
Revenue—See pages 14 and 15 .....				
"    Staff — \$18,094,522.85				
"    Repairs 13,717,907.33 .....	31,812,430	18		
Total .....			164,140,734	44
Miscellaneous Expenditure—				
Income—See page 21 .....	1,387,673	26		
Revenue—See page 21 .....	69,711	05		
Total expenditure .....			1,457,384	31
Total expenditure .....			900,596,933	18
CLASSIFICATION OF EXPENDITURE INTO CAPITAL AND CONSOLIDATED FUND—				
Railways—				
Capital—Including Quebec bridge .....	391,884,025	79		
Consolidated Fund (Income and Revenue) Railway Subsidies, etc .....	343,114,788	64		
Total .....			734,998,814	43
Canals—				
Capital .....	122,919,314	84		
Consolidated Fund (Income and Revenue) .....	41,221,419	60		
Total .....			164,140,734	44
General Expenditure—				
Consolidated Fund (Income and Revenue) .....	1,457,384	31		
Total expenditure .....			1,457,384	31
Total expenditure .....			900,596,933	18
TOTAL REVENUE RECEIVED from July 1, 1867, to March 31, 1917—				
Railways—See page 22 .....	248,395,298	47		
Canals—See page 15 .....	16,665,271	32		
Total revenue .....			265,060,569	79



## RAILWAY AND BRIDGE SUBSIDY STATEMENTS

I.—*Statement showing the Railway Subsidies paid during the year ending March 31, 1917.*

II.—*Statement of Railway and Bridge Subsidies paid from July 1, 1883, to March 31st, 1917.*



SESSIONAL PAPER No. 20

## RAILWAY Subsidies paid during the year ending March 31, 1917.

Name of Railway.	Amount.
	\$ cts.
<i>Lake Erie and Northern Railway Co.—</i>	
Balance of subsidy on 50·03 miles of railway from the town of Galt to Port Dover..	185,062 40
<i>Ha-Ha Bay Railway Co.—</i>	
Further payment on account of subsidy on 12 miles of railway from La Terrière Junction southerly to Lake Kenogami <i>via</i> La Terrière Village .....	235 80
<i>Canadian Northern Ontario Railway Co.—</i>	
Further payment on account of subsidy on 894·48 miles of railway from Ottawa to Port Arthur .....	\$236,180 41
Subsidy on Capreol-Sellwood Junction. section being 7·5 miles... ..	42,000 00
Further subsidy on 214·57 miles from Toronto to Ottawa .....	80,000 00
	358,180 41
<i>Kettle Valley Railway Co.—</i>	
Further and full payment of subsidy on 52·48 miles of railway from a point on the line between Merritt and Penticton Wharf, about 25 miles south of Merritt to a point on the Fraser River near Hope Station.....	\$111,674 82
Payment of full subsidy on 28·65 miles of railway from Merritt to Brookmere and 70·8 miles from Penticton Wharf to Princeton, a total of 99·45 miles .....	179,227 61
	290,902 43
<i>Edmonton, Dunvegan and British Columbia Railway Co.—</i>	
Subsidy on 50·11 miles, from a point on its line situated near the Spirit River Settlement to and through the Grand Prairie Land District, Alberta.....	125,202 84
	\$959,583 88



8 GEORGE V, A. 1918

STATEMENT showing subsidies voted for Railways as to which contracts

Subsidies Voted.		Number.	Railways.	July 1, 1883, to March 31, 1910
Authority.	Amount.			
	\$ cts.			\$ cts.
46 Vic., chap. 25	156,800 00	1	International Railway, Quebec.....	156,800 00
53 " 2				
45 " 14	384,000 00			
46 " 25	80,000 00			
48-49 " 59	96,000 00			
49 " 10	186,295 00			
50-1 " 24	28,800 00	2	Quebec and Lake St. John Railway, Quebec....	1,233,943 50
51 " 3	96,000 00			
52 " 3	64,000 00			
53 " 2	40,000 00			
54-5 " 8	5,250 00			
57-8 " 4	44,800 00			
46 " 24	89,600 00			
49 " 10	70,000 00	3	Kingston, Napanee and Western, Ry., formerly Napanee, Tamworth and Quebec Ry., Ontario...	208,732 80
50-1 " 24	12,800 00			
52 " 3	32,000 00			
55-6 " 5	64,000 00			
47 " 8	272,000 00			
51 " 3	41,000 00	4	Pontiac Pacific Junction Railway, Quebec....	193,578 00
53 " 2	24,000 00			
46 " 25	115,200 00			
47 " 8	76,800 00	5	Caraquette Railway, N.-B.. ..	224,000 00
50-1 " 21	32,000 00			
47 " 8	32,000 00			
49 " 10	57,600 00			
52 " 3	22,400 00	6	Canadian Northern Quebec Ry. Co., formerly Great Northern Ry., Quebec.....	1,034,280 60
53 " 2	48,000 00			
56 " 2	47,000 00			
57-8 " 4	70,400 00			
7-8 Ed. VII 63				
47 " 8	48,000 00	7	Kingston and Pembroke Ry., Ontario.....	48,000 00
45 " 14				
46 " 26	660,000 00	8	Northern and Pacific Junction Railway, Ontario..	1,320,000 00
53 " 2	660,000 00			
47 " 8	128,000 00			
48-9 " 59	19,200 00			
49 " 10	32,000 00	9	Canada Eastern Ry., formerly Northern and West- ern Ry., N.B., including also Chatham Branch Ry.....	374,839 84
48-9 " 59	24,439 84			
51 " 3	140,800 00			
57-8 " 4	35,200 00			
62-3 " 7	*			
47 " 8	60,342 00	10	Quebec Central Railway, Quebec.....	403,980 69
51 " 3				
7-8 " 63				
53 " 2	288,000 00			
48-9 " 59	72,000 00	11	Montreal and Sorel Railway, Quebec.....	93,757 57
53 " 2	40,000 00			
48-9 " 59	30,000 00			
50-1 " 24	64,000 00	12	Montreal and Champlain Junction Ry., Quebec...	103,600 00
51 " 3	9,600 00			
46 " 25	38,400 00	13	Elgin Petittcodiac and Havelock Railway, N.B....	82,652 82
51 " 3	44,252 82			
47 " 8	22,400 00	14	St. Louis and Richibucto Railway, N.B.....	22,400 00
48-9 " 59	96,000 00			
49 " 10	38,400 00	15	Canada Atlantic Railway, Ontario.....	282,355 20
50-1 " 24	180,000 00			
47 " 6	750,000 00	16	Esquimalt and Nanaïmo Railway, B.C.. ..	750,000 00
47 " 8	96,000 00	17	Erie and Huron Railway, Ontario .....	96,000 00
46 " 25				
47 " 8	320,000 00	18	Baie des Chaleurs Railway, Quebec.....	620,000 00
52 " 3	300,000 00			
Carried forward.....				7,248,921 02



SESSIONAL PAPER No. 20

have been entered into and payments made up to March 31, 1917—Continued.

Payments.							Total, to March 31, 1917.	Number.
1910-1911.	1911-1912.	1912-1913.	1913-1914.	1914-1915.	1915-1916.	1916-1917.		
\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	
.....	.....	.....	.....	.....	.....	.....	156,800 00	1
.....	27,520 00	.....	.....	.....	.....	.....	1,261,463 50	2
.....	.....	.....	.....	.....	.....	.....	208,732 80	3
.....	.....	.....	.....	.....	.....	.....	193,578 00	4
.....	.....	.....	.....	.....	.....	.....	224,000 00	5
144,608 51	86,468 03	.....	.....	.....	.....	.....	1,265,357 14	6
.....	.....	.....	.....	.....	.....	.....	48,000 00	7
.....	.....	.....	.....	.....	.....	.....	1,320,000 00	8
.....	.....	.....	.....	.....	.....	.....	374,839 84	9
129,320 61	.....	8,576 00	.....	.....	43,161 60	.....	585,038 90	10
.....	.....	.....	.....	.....	.....	.....	93,757 57	11
.....	.....	.....	.....	.....	.....	.....	103,600 00	12
.....	.....	.....	.....	.....	.....	.....	82,652 82	13
.....	.....	.....	.....	.....	.....	.....	22,400 00	14
.....	.....	.....	.....	.....	.....	.....	282,355 20	15
.....	.....	356,440 00	.....	405,120 00	.....	.....	1,520,560 00	16
.....	.....	.....	.....	.....	.....	.....	96,000 00	17
.....	.....	.....	.....	.....	.....	.....	620,000 00	18
273,929 12	113,988 03	374,016 00	.....	405,120 00	43,161 60	.....	8,459,135 77	



STATEMENT showing subsidies voted for Railways as to which contracts

Subsidies Voted.			Number.	Railways.	July 1, 1883, to March 31, 1910.
Authority.	Amount.				
	\$ cts.				\$ cts.
			Brought forward.....	7,248,921 02	
48-9 Vic., c. 59	118,400 00	1	New Brunswick and Prince Edward Island Railway.	113,440 00	
50-1 " 24	217,600 00	2	Laurentian Railway, formerly St. Lawrence, Lower Laurentian and Saguenay Railway, Quebec.....	217,600 00	
49 " 10	11,200 00	3	L'Assomption Railway, Quebec .....	11,200 00	
49 " 10	32,000 00	4	} Great Eastern Railway, Quebec.....	40,345 00	
50-1 " 24	96,000 00				
56 " 2	64,000 00				
53 " 2	37,500 00	5	} Irondale, Bancroft and Ottawa Railway, Ontario..	144,000 00	
47 " 8	160,000 00				
52 " 3					
49 " 10	96,000 00	6	} Buctouche and Moncton Railway, N.B.....	101,600 00	
50-1 " 24	6,400 00				
47 " 8	51,200 00	7	} Albert Southern Railway, N.B.....	50,460 00	
52 " 3					
50-1 " 24	65,200 00	8	} Lake Temiscamingue Colonisation Ry. Quebec. ...	310,335 95	
57-8 " 4	274,940 00				
49 " 10	38,400 00	9	} Joggins Railway, N.S. ....	37,500 00	
50-1 " 24	4,000 00				
45 " 14	240,000 00	10	} Temiscouata Railway, N.B., and Quebec.....	645,950 00	
48-9 " 58	258,000 00				
51 " 3	100,000 00				
53 " 2	51,200 00	11	} Leamington and St. Clair Railway, Ontario..	51,200 00	
48-9 " 50	44,800 00				
50 1 " 24	6,400 00				
59 " 10	16,000 00	12	Toronto, Grey and Bruce Railway, Ontario.....	14,656 00	
50-1 " 24	22,400 00	13	Dominion Lime Co., Quebec.....	15,360 00	
49 " 10	256,000 00	14	} West Ontario Pacific Railway and Ontario and Quebec Railway.....	256,000 00	
53 " 2					
50-1 " 24	96,000 00	15	} Drummond County Railway, Quebec.....	423,936 00	
52 " 3	14,400 00				
53 " 2	76,800 00				
57-8 " 4	96,000 00	16	} Brockville, Westport and Sault Ste. Marie Rail- way, Ontario. ....	140,800 00	
48-9 " 59	128,000 00				
53 " 2					
54-5 " 8	64,000 00	17	} Montreal and Lake Maskinongé Railway, Quebec..	41,280 00	
57-8 " 4					
49 " 10	32,000 00	18	} South Norfolk Railway, Ontario.....	54,400 00	
53 " 2	10,200 00				
50-1 " 24	51,400 00	19	} Guelph Junction Railway, Ontario.....	46,000 00	
50-1 " 24	51,200 00				
48-9 " 54	22,400 00	20	} Belleville and North Hastings Railway, Ontario.....	21,888 00	
49 " 19					
49 " 10	108,800 00	21	} Hereford Railway, Quebec.....	155,200 00	
52 " 3	48,000 00				
50-1 " 23	118,400 00	22	} Lake Erie and Detroit River Railway, Ontario. ...	475,851 00	
55-6 " 4	224,000 00				
62-3 " 5	*	23	} Beauharnois Junction Railway, Quebec.....	62,400 00	
50-1 " 27	62,400 00				
56 " 4	138,400 00	24	} St. Catharines and Niagara Central Ry., Ontario..	38,400 00	
50-1 " 24					
55-6 " 5	108,000 00	25	} Fredericton and St. Mary's Ry. Bridge Co., N.B.....	30,000 00	
57-8 " 4	108,800 00				
52 " 3	30,000 00	26	} Harvey Branch Railway Co., N.B.....	5,553 57	
50-1 " 24	9,600 00				
55-6 " 5	240,000 00	27	} Nova Scotia Central Railway Co., N. S. ....	235,200 00	
61 " 1					
50-1 " 24	44,800 00	28	} Cumberland Railway and Coal Co., N.S. ....	39,850 00	
52 " 3	19,200 00				
52 " 3	54,400 00	30	} Thousand Islands Railway, Ontario.....	29,840 00	
63 4 " 8					
Carried forward.....				11,072,766 54	



SESSIONAL PAPER No. 20

have been entered into and payments made up to March 31, 1917—Continued.

Payments.							Total to March 31, 1917.	Number.
1910-11.	1911-12	1912-13.	1913-14.	1914-15.	1915-16.	1916-17.		
\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	
273,929 12	113,988 03	374,016 00	.....	405,120 00	43,161 60	....	8,459,135 77	
.....	.....	.....	.....	.....	.....	.....	113,440 00	1
.....	.....	.....	.....	.....	.....	.....	217,600 00	2
.....	.....	.....	.....	.....	.....	.....	11,200 00	3
.....	.....	.....	.....	.....	.....	.....	40,345 00	4
.....	.....	.....	.....	.....	.....	.....	144,000 00	5
.....	.....	.....	.....	.....	.....	.....	101,600 00	6
.....	.....	.....	.....	.....	.....	.....	50,460 00	7
.....	.....	.....	.....	.....	.....	.....	310,335 95	8
.....	.....	.....	.....	.....	.....	.....	37,500 00	9
.....	.....	.....	.....	.....	.....	.....	645,950 00	10
.....	.....	.....	.....	.....	.....	.....	51,200 00	11
.....	.....	.....	.....	.....	.....	.....	14,656 00	12
.....	.....	.....	.....	.....	.....	.....	15,360 00	13
.....	.....	.....	.....	.....	.....	.....	256,000 00	14
.....	.....	.....	.....	.....	.....	.....	423,936 00	15
.....	.....	.....	.....	.....	.....	.....	140,800 00	16
.....	.....	.....	.....	.....	.....	.....	41,280 00	17
.....	.....	.....	.....	.....	.....	.....	54,400 00	18
.....	.....	.....	.....	.....	.....	.....	46,000 00	19
.....	.....	.....	.....	.....	.....	.....	21,888 00	20
.....	.....	.....	.....	.....	.....	.....	155,200 00	21
.....	.....	.....	.....	.....	.....	.....	475,851 00	22
.....	.....	.....	.....	.....	.....	.....	62,400 00	23
.....	.....	.....	.....	.....	.....	.....	38,400 00	24
.....	.....	.....	.....	.....	.....	.....	30,000 00	25
.....	.....	.....	.....	.....	.....	.....	5,553 57	26
.....	.....	.....	.....	.....	.....	.....	235,200 00	27
.....	.....	.....	.....	.....	.....	.....	39,850 00	28
.....	.....	.....	.....	.....	.....	.....	13,600 00	29
.....	.....	.....	.....	.....	.....	.....	29,840 00	30
273,929 12	113,988 03	374,016 00	.....	405,120 00	43,161 60	.....	12,282,981 29	



STATEMENT showing subsidies voted for Railways as to which contracts

SUBSIDIES VOTED.		Number.	Railways.	July 1, 1883, to March 31, 1910.
Authority.	Amount.			
	\$ cts.			\$ cts.
			Brought forward.....	11,072,766 54
52 Vic., chap. 3	96,000 00	1	Quebec, Montmorency and Charlevoix Ry. Co., Que..	96,000 00
56 " 3	375,000 00	2	St. Clair Frontier Tunnel Co., Ontario ..	375,000 00
52 " 3	57,600 00	3	Brantford, Waterloo and Lake Erie Ry., Ontario....	57,600 00
50-1 " 24	287,200 00	4	Port Arthur, Duluth and Western Ry., Ontario ....	271,200 00
57-8 " 4				
51 " 3				
53 " 2				
50-1 " 24	192,000 00	5	Montreal and Ottawa Railway, Ontario .....	192,000 00
53 " 2				
54-5 " 8				
57-8 " 4				
50-1 " 24	44,800 00	6	Cornwallis Valley Railway, N.S.....	44,800 00
52 " 3	320,000 00			
52 " 3	64,000 00	7	Ottawa, Northern and Western Railway, Quebec, formerly Ottawa and Gatineau Valley Railway.	414,931 20
57-8 " 6	*			
60-1 " 4				
47 " 8				
51 " 3	83,612 00			
52 " 3	142,400 00	8	Central Railway, N.B. ....	226,012 54
53 " 2	48,000 00			
57-8 " 4				
61 " 1				
62-3 " 1				
53 " 2	361,270 00	9	Montreal and Western Railway, Quebec.....	361,270 00
52 " 3	128,000 00	10	Parry Sound and Colonization Railway, Ontario ....	152,800 00
57-8 " 4	64,000 00			
52 " 3	163,200 00	11	Shuswap and Okanagan Railway, B.C.....	163,200 00
54-5 " 8	89,600 00			
53 " 2	35,200 00	12	Tobique Valley Railway, N.B. ....	134,016 00
55-6 " 5	9,600 00			
53 " 2	112,000 00	13	Colombia and Kootenay, B.C .....	88,800 00
53 " 2	35,200 00	14	Waterloo Junction Railway, Ontario .....	32,800 00
53 " 2	99,200 00	15	Orford Mountain Railway Company, Quebec.....	192,942 50
53 " 2	57,600 00			
55-6 " 5	25,024 00	16	St. Lawrence and Adirondack Railway, Quebec ...	149,481 60
55-6 " 5	*40,000 00	17	New Glasgow Iron, Coal and Railway Co., N.S.....	39,840 00
56 " 2	102,400 00			
57-8 " 4	102,400 00	18	United Counties Railway Co., Quebec.....	188,816 00
55-6 " 5	*21,600 00	19	Phillipsburg Junction Ry. Quarry Co., Quebec.....	23,712 00
55-6 " 5	*430,400 00	20	Ottawa, Arnprior and Parry Sound Ry., Ontario.....	779,712 00
56 " 2	67,200 00			
57-8 " 4	38,400 00	21	Montfort Colonization Railway, Quebec.....	167,440 00
60-1 " 4	66,000 00			
55-6 " 5	48,000 00			
57-8 " 4	48,000 00	22	Lotbinière and Megantic Railway, Québec.....	96,000 00
56 " 2	48,000 00	23	Grand Trunk, Georgian Bay and Lake Erie Ry., Ont.	39,744 00
55-6 " 5	80,000 00	24	Can. Pac. Ry., B.C., Revelstoke to Arrow Lake.....	80,000 00
57-8 " 4	121,600 00	25	Nakusp and Slocan Railway, B.C .....	117,760 00
55-6 " 5	89,600 00	26	Dominion Coal Company, N.S.....	87,803 00
56 " 2	22,400 00	27	Oshawa Railway and Navigation Co., Ontario. ....	22,400 00
57-8 " 4	*51,200 00	28	Tilsonburg, Lake Erie and Pacific Ry., Ontario. ....	117,431 48
56 " 2	*11,200 00	29	St Stephen and Milltown Ry., N.B.....	14,848 00
57-8 " 4	*38,400 00	30	Gulf Shore Railway Company, N.B.....	53,699 20
57-8 " 4	9,000 00	31	Cap de la Magdeleine Railway, Quebec.....	7,424 00
56 " 2	32,000 00	32	Ontario, Belmont and Northern Ry. Co., Ontario ...	30,720 00
*	*	33	Coast line of N.S., now Halifax and Yarmouth Ry ..	160,000 00
*	*	34	Ottawa and New York Railway Company, Ontario..	262,384 00
			Carried forward....	16,315,359 06



SESSIONAL PAPER No. 20

have been entered into and payments made up to March 31, 1917.—Continued.

Payments.							Total to March 31, 1917.	Number.
1910-11.	1911-12.	1912-13.	1913-14.	1914-15.	1915-16.	1916-17.		
\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	
273,929 12	113,988 03	374,016 00	.....	405,120 00	43,161 60	.....	12,282,981 29	
.....	.....	.....	.....	.....	.....	.....	96,000 00	1
.....	.....	.....	.....	.....	.....	.....	375,000 00	2
.....	.....	.....	.....	.....	.....	.....	57,600 00	3
.....	.....	.....	.....	.....	.....	.....	271,200 00	4
.....	.....	.....	.....	.....	.....	.....	192,000 00	5
.....	.....	.....	.....	.....	.....	.....	44,800 00	6
.....	.....	.....	.....	.....	.....	.....	414,931 20	7
.....	.....	.....	.....	.....	.....	.....	226,012 54	8
.....	.....	.....	.....	.....	.....	.....	361,270 00	9
.....	.....	.....	.....	.....	.....	.....	152,800 00	10
.....	.....	.....	.....	.....	.....	.....	163,200 00	11
.....	.....	.....	.....	.....	.....	.....	134,016 00	12
.....	.....	.....	.....	.....	.....	.....	88,800 00	13
.....	.....	.....	.....	.....	.....	.....	32,800 00	14
.....	.....	9,984 00	.....	.....	.....	.....	202,926 50	15
.....	.....	.....	.....	.....	.....	.....	149,481 60	16
.....	.....	.....	.....	.....	.....	.....	39,840 00	17
.....	.....	.....	.....	.....	.....	.....	183,816 00	18
.....	.....	.....	.....	.....	.....	.....	23,712 00	19
.....	.....	.....	.....	.....	.....	.....	779,712 00	20
.....	.....	.....	.....	.....	.....	.....	167,440 00	21
.....	.....	.....	.....	.....	.....	.....	96,000 00	22
.....	.....	.....	.....	.....	.....	.....	39,744 00	23
.....	.....	.....	.....	.....	.....	.....	80,000 00	24
.....	.....	.....	.....	.....	.....	.....	117,760 00	25
.....	.....	.....	.....	.....	.....	.....	87,808 00	26
.....	.....	.....	.....	.....	.....	.....	22,400 00	27
.....	.....	.....	32,640 00	.....	.....	.....	150,071 48	28
.....	.....	.....	.....	.....	.....	.....	14,848 00	29
.....	.....	.....	.....	.....	.....	.....	53,699 20	30
.....	.....	.....	.....	.....	.....	.....	7,424 00	31
.....	.....	.....	.....	.....	.....	.....	30,720 00	32
.....	.....	.....	.....	.....	.....	.....	160,000 00	33
.....	.....	.....	.....	.....	.....	.....	262,384 00	34
273,929 12	113,988 03	384,000 00	32,640 00	405,120 00	43,161 60	.....	17,568,197 81	



8 GEORGE V, A. 1918

STATEMENT showing subsidies voted for Railways as to which contracts

Subsidies Voted.		Number.	Railways.	July 1, 1883, to March 31, 1910.
Authority.	Amount.			
	\$ cts.			\$ cts.
			Brought forward.....	16,315,359 06
60-61 Vic., chap. 5	3,630,000 00	1	Canadian Pacific Ry. Co., B.C. (Crow's Nest Pass)...	3,404,720 00
60-61 " 4	500,000 00	2	Grand Trunk Ry. Co., Victoria Jubilee Bridge, Que.	500,000 00
63 " 3				
7-8 Ed. VII, 63	*	3	International Ry. of New Brunswick, formerly Res- tigouche and Western Ry. Co.....	555,751 47
*	*	4	East Richelieu Railway Co., Quebec.....	69,952 00
7-8 Ed. VII, 63	*	5	South Shore Ry. (Quebec, Montreal and Southern)...	430,975 36
*	*	6	Pembroke Southern Railway, Ontario.....	64,000 00
*	*	7	Massawippi Valley Railway Co., Quebec... ..	5,376 00
*	*	8	Inverness and Richmond Ry. Co., N.S., now Inver- ness Ry. and Coal Co.....	368,545 97
*	*	9	Canadian Northern Ry. Co., Ontario, Manitoba and N.W.T.....	1,909,132 00
*	*	10	Canadian Pacific Railway Co. (Pipestone Branch). .	160,000 00
6-7 Ed. VII, 40	*	11	Central Ontario Railway Co., Ontario.....	179,466 00
*	*	12	Midland Railway Co., N.S.....	399,060 40
63-3 Vic., chap. 7	1,000,000 00	13	Quebec Bridge Co., Quebec.....	374,353 33
63-4 " 8				
*		14	St. Mary River Railway Co., N.W.T.....	148,094 00
60-1 Vic., cnap. 4	212,500 00	15	Pontiac Pacific and Ottawa & Gatineau Ry. Co. (Interprovincial Bridge over Ottawa River).....	212,500 00
63-4 " 2				
1 Ed. VII, chap. 7	*	16	Atlantic and Lake Superior Ry., Quebec.....	144,969 02
1 " 7	*	17	Montreal and Province Line Railway, Quebec.....	58,560 00
62-3 Vic., chap. 7	*	18	York and Carleton Railway, N.B.....	32,896 00
62-3 " 7				
63-4 " 8	*	19	Algoma Central and Hudson Bay Ry., Ontario.....	924,976 00
1 Ed. VII, chap. 7	*			
*	*	20	Cape Breton Extension Railway, N.S.....	196,800 00
*	*	21	Can. Pac. Ry. Co. (Kootenay & Arrowhead Branch).	153,866 00
*	*	22	" (Selkirk Branch).....	83,200 00
*	*	23	" (Dymont Branch).....	22,336 00
*	*	24	" (Waskada Branch).....	64,000 00
9-10 Ed. VII, 51	*	25	Algoma Eastern Ry. Co., formerly Manitoulin and North Shore Ry. Co., Ontario.....	32,000 00
*	*	26	Bay of Quinte Railway, Ont.....	141,722 45
*	*	27	Bruce Mines and Algoma Railway, Ont.....	53,920 00
*	*	28	Maganetawan River Railway Co., Ont.....	3,552 00
*	*	29	Canadian Northern Quebec Ry., formerly Chateau- guay and Northern Ry., Quebec.....	391,819 75
*	*	30	Canadian Pacific Ry. Co. (Pheasant Hills Branch)...	435,200 00
*	*	31	Halifax and Southwestern Railway Co., N.S.....	1,238,450 93
*	*	32	Northern Colonization Railway Co., Quebec.....	355,200 00
*	*	33	New Brunswick Coal and Railway Co., N.B.....	48,000 00
*	*	34	Schomberg and Aurora Railway Co., Ont.....	46,144 00
*	*	35	Lindsay, Bobcaygeon Pontypool Ry. Co., Ont... ..	185,173 06
*	*	36	Middleton and Victoria Beach Ry. Co., N.S.....	125,760 00
Ed. VII, chap. 57	*	37	Nicola, Kamloops and Similkameen Coal & Ry. Co..	300,800 00
4 " 34	*	38	Canadian Pacific Ry. (Staynerville Branch).....	13,024 00
6 " 43	*	39	Klondike Mines Railway.....	197,184 00
6 " 43	*	40	Kettle Valley Ry. Co., B.C.....	97,771 52
6 " 43	*	41	Colchester Coal and Ry. Co., N.S.....	12,800 00
3 " 57	*	42	Minudie Coal Co., N.S.....	18,544 00
6 " 43	*	43	Atlantic, Quebec and Western Ry. Co., Quebec.....	365,568 00
9-10 " 51	*			
6 " 43	*	44	Napierville Junction Ry. Co., Quebec.....	173,440 00
6-7 " 40	*	45	Edmonton, Yukon and Pac. Ry. Co., Alberta.....	91,200 00
6-7 " 40	*	46	Canadian Northern Ontario Ry. Co.....	2,123,942 40
7-8 " 63	*			
			Carried forward.....	33,230,105 32

† Of this amount, \$16,164.43 was in connection with subsidy to Montreal and Sorel Railway.



SESSIONAL PAPER No. 20

have been entered into and payments made up to March 31, 1917—Continued.

Payments.							Total March 31, 1917.	Number.
1910-11.	1911-12.	1912-13.	1913-14.	1914-15.	1915-16.	1916-17.		
\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	
273,929 12	113,988 03	384,000 00	32,640 00	405,120 00	43,161 60	.....	17,568,197 81	
.....	.....	.....	.....	.....	.....	.....	3,404,720 00	1
.....	.....	.....	.....	.....	.....	.....	500,000 00	2
169,536 00	.....	.....	.....	.....	791 93	.....	726,080 00	3
.....	.....	.....	.....	.....	.....	.....	69,952 00	4
60,000 00	23,835 70	.....	.....	.....	.....	.....	1514,811 06	5
.....	.....	.....	.....	.....	.....	.....	64,000 00	6
.....	.....	.....	.....	.....	.....	.....	5,376 00	7
.....	.....	.....	.....	.....	.....	.....	368,545 97	8
.....	.....	.....	.....	.....	.....	.....	1,909,132 00	9
.....	.....	.....	.....	.....	.....	.....	160,000 00	10
24,601 32	826 17	.....	969 30	.....	.....	.....	205,862 79	11
.....	.....	.....	.....	.....	.....	.....	399,060 40	12
.....	.....	.....	.....	.....	.....	.....	374,353 33	13
.....	.....	.....	.....	.....	.....	.....	148,094 00	14
.....	.....	.....	.....	.....	.....	.....	212,500 00	15
.....	.....	.....	.....	18,449 17	.....	.....	a163,418 19	16
.....	.....	.....	.....	.....	.....	.....	58,560 00	17
.....	.....	.....	.....	.....	.....	.....	32,896 00	18
.....	133,584 00	394,859 44	456,304 00	138,980 56	.....	.....	2,048,704 00	19
.....	.....	.....	.....	.....	.....	.....	196,800 00	20
.....	.....	.....	.....	.....	.....	.....	153,866 00	21
.....	.....	.....	.....	.....	.....	.....	83,200 00	22
.....	.....	.....	.....	.....	.....	.....	22,336 00	23
.....	.....	.....	.....	.....	.....	.....	64,000 00	24
68,638 72	.....	254,089 40	179,897 01	13,022 87	.....	.....	547,648 00	25
.....	.....	.....	.....	.....	.....	.....	141,722 45	26
.....	.....	.....	.....	.....	.....	.....	53,920 00	27
.....	.....	.....	.....	.....	.....	.....	3,552 00	28
.....	.....	.....	.....	.....	.....	.....	391,819 75	29
.....	.....	.....	.....	.....	.....	.....	435,200 00	30
.....	.....	.....	.....	.....	.....	.....	1,238,450 93	31
.....	.....	.....	.....	.....	.....	.....	355,200 00	32
.....	.....	.....	.....	.....	.....	.....	48,000 00	33
.....	.....	.....	.....	.....	.....	.....	46,144 00	34
.....	.....	.....	.....	.....	.....	.....	185,173 06	35
.....	.....	.....	.....	.....	.....	.....	125,760 00	36
.....	.....	.....	.....	.....	.....	.....	300,800 00	37
.....	.....	.....	.....	.....	.....	.....	13,024 00	38
.....	.....	.....	.....	.....	.....	.....	197,184 00	39
.....	148,800 00	107,138 40	699,389 60	369,197 28	460,691 49	290,902 43	2,174,190 72	40
.....	.....	.....	.....	.....	.....	.....	12,800 00	41
.....	.....	.....	.....	.....	.....	.....	18,544 00	42
31,334 40	91,279 60	414,618 00	.....	.....	.....	.....	902,800 00	43
.....	.....	.....	.....	.....	.....	.....	173,440 00	44
.....	.....	.....	.....	.....	.....	.....	91,200 00	45
116,889 60	.....	.....	8,948,809 47	2,243,335 80	495,604 83	358,180 41	14,386,762 51	46
744,929 16	512,313 50	1,554,705 24	10,318,009 38	3,288,405 68	1,000,249 85	649,082 84	51,297,800 97	

a Amount actually paid after deductions amounting to \$1,521.82 made in 1905-06 (being for refunds, etc.,) from the total of \$146,490.84, previously reported, for which cheques had issued.



8 GEORGE V, A. 1918

STATEMENT showing subsidies voted for Railways as to which contracts

Subsidies Voted.		Number.	Railways.	July 1, 1883, to Mar. 31, 1910.
Authority.	Amount.			
	\$ cts.			\$ cts.
			Brought forward. ....	33,230,105 32
7-8 Ed. VII. c. 63	*	1	Maritime Coal and Railway Co.....	3,200 00
7-8 " 63	*	2	St. Mary's and Western Ontario Ry. Co., Ont.....	67,344 00
7-8 " 63	*	3	North Shore Ry. Co., formerly Beersville Coal and Ry. Co.....	27,616 00
7-8 " 63	*	4	St. Maurice Valley Ry. Co.—Three Rivers to Grand Mère, Que.....	112,640 00
7-8 " 63	*	5	Grand Trunk Pacific Ry. Co. ....	917,800 96
6 " 43	*	6	Can. Pacific Ry. Co., Teulon to Icelandic River.....	30,800 00
7-8 " 63	*	7	Canadian Pacific Ry. Co., Moosejaw northwesterly..	303,360 00
7-8 " 63	*	8	Canadian and Gulf Terminal Ry. Co.....	
6-7 " 40	*	9	Liverpool and Milton Ry. 5 miles, N.S.....	
7-8 " 63	*	10	Thessalon and Northern Ry. Co., Ont.....	
7-8 " 34	*	11	Vancouver and Lulu Island Railway Co., B.C.....	
7-8 " 51	*	12	Quebec and Saguenay Ry. Co., Que.....	
7-8 " 63	*	13	Canadian Pacific Ry., Winnipeg to Gimli, Man.....	
9-10 " 51	*	14	Ha-Ha Bay Railway Co., Que.....	
2 Geo. V 47	*	15	Northern New Brunswick and Seaboard Ry. Co., N.B.....	
3-4 " 46	*	16	Can. Northern Pacific Ry. Co., B.C.....	
2 " 9	*	17	Fredericton and Grand Lake Ry. Co., N.B.....	
2 " 48	*	18	Southampton Railway Co., N.B.....	
2 " 48	*	19	St. John and Quebec Railway Co., N.B.....	
2 " 48	*	20	Canadian Northern Alberta Ry. Co., Alta.....	
2 " 7	*	21	Central Ry. of Canada, Que.....	
3-4 " 10	*	22	Temiskaming and Northern Ont. Ry. Co., Ont..	
2 " 48	*	23	Lake Erie and Northern Ry. Co., Ont .....	
3-4 " 53	*	24	Can. Pac. Ry., Bridge at Outlook.....	
2 " 48	*	25	Can. Pac. Ry., Bridge at Edmonton, Alta .....	
2 " 48	*	26	Alberta Central Railway, Alta.....	
3-4 " 46	*	27	Kootenay Central Ry. Co., B.C.....	
2 " 48	*	28	Can. Pac. Ry., Gimli to Icelandic River Bridge.....	
3-4 " 46	*	29	Edmonton, Dunvegan and British Columbia Ry., Alta.....	
			Total.....	34,692,866 28
	186,500 annu-			
37 Vic., chap. 14	ally for 20 yrs.	30	Atlantic and Northwestern Railway.....	3,732,000 00
46 " 2	} 1,525,250 00	31	Central Canada Railway..	1,525,250 00
47 " 8		32	Canadian Pacific Extension.....	1,500,000 00
48-9 " 58	1,500,000 00		Total..	41,450,116 28



SESSIONAL PAPER No. 20

have been entered into and payments made up to March 31, 1917.—*Concluded.*

Payments.							Total March 31, 1917.	Number.
1910-11.	1911-12.	1912-13.	1913-14.	1914-15.	1915-16.	1916-17.		
\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	
744,929 16	512,313 50	1,554,705 24	10,318,009 38	3,288,405 68	1,000,249 85	649,082 84	51,297,800 97	
.....	365 00	.....	.....	.....	.....	.....	3,200 00	1
.....	.....	.....	.....	.....	.....	.....	67,709 00	2
.....	.....	.....	.....	.....	.....	.....	27,616 00	3
60,480 00	.....	.....	.....	.....	.....	.....	173,120 00	4
302,679 04	.....	.....	.....	.....	.....	.....	1,220,480 00	5
.....	.....	81,200 00	.....	.....	.....	.....	112,000 00	6
.....	78,432 00	.....	103,682 27	.....	.....	.....	485,474 27	7
144,803 84	65,249 75	.....	.....	.....	.....	.....	210,053 59	8
32,000 00	.....	.....	.....	.....	.....	.....	32,000 00	9
.....	6,112 00	.....	.....	.....	.....	.....	6,112 00	10
.....	61,760 00	.....	.....	.....	.....	.....	61,760 00	11
.....	104,992 00	27,641 60	116,167 68	.....	.....	.....	248,801 28	12
.....	30,176 00	4,346 43	.....	.....	.....	.....	34,522 43	13
.....	.....	148,148 20	66,919 28	16,158 72	.....	235 80	231,462 00	14
.....	.....	86,528 00	21,632 00	.....	.....	.....	108,160 00	15
.....	.....	2,705,378 00	2,520,281 00	178,077 80	244,889 57	.....	5,648,626 37	16
.....	.....	104,996 04	.....	111,579 96	.....	.....	216,576 04	17
.....	.....	48,442 88	32,837 12	.....	.....	.....	81,280 00	18
.....	.....	174,120 96	364,617 42	59,581 32	.....	.....	598,319 70	19
.....	.....	.....	2,832,024 00	262,080 00	.....	.....	3,094,104 00	20
.....	.....	.....	30,145 02	.....	.....	.....	30,145 02	21
.....	.....	.....	2,134,080 00	.....	.....	.....	2,134,080 00	22
.....	.....	.....	135,129 60	.....	.....	185,062 40	320,192 00	23
.....	.....	.....	115,000 00	.....	.....	.....	115,000 00	24
.....	.....	.....	126,000 00	.....	.....	.....	126,000 00	25
.....	.....	.....	119,712 00	209,768 00	75,000 00	.....	404,480 00	26
.....	.....	.....	.....	1,065,856 00	.....	.....	1,065,856 00	27
.....	.....	.....	.....	.....	80,032 00	.....	80,032 00	28
.....	.....	.....	.....	.....	.....	125,202 84	125,202 84	29
1,284,892 04	859,400 25	4,935,507 35	19,036,236 77	5,191,507 48	1,400,171 42	959,583 88	68,360,165 47	MINIMUM
.....	.....	.....	.....	.....	.....	.....	3,732,000 00	30
.....	.....	.....	.....	.....	.....	.....	1,525,250 00	31
.....	.....	.....	.....	.....	.....	.....	1,500,000 00	32
1,284,892 04	859,400 25	4,935,507 35	19,036,236 77	5,191,507 48	1,400,171 42	959,583 88	75,117,415 47	



APPENDIX II

GOVERNMENT RAILWAYS.

REPORT OF C. A. HAYES, GENERAL MANAGER.

YEAR ENDED MARCH 31, 1917.

INTERCOLONIAL RY. DIVISION.

CAPITAL ACCOUNT.

The cost of the road and equipment, on March 31, 1916,		
was.....		\$115,766,560 24
The additional expenditures during the year were..		4,490,472 56
		<hr/>
Making the total cost to March 31, 1917 ..		\$120,257,032 80
		<hr/>
The gross earnings and working expenses for the		
year compare as follows—		
Gross earnings—I. C. R. Rail Account ..	\$16,570,186 31	
Water Account..	197,200 58	
	<hr/>	
	\$16,767,386 89	
N.B. and P.E.I. Ry. Account.	38,336 75	
	<hr/>	\$16,805,723 64
Working expenses—I. C. R. Rail Account ..	\$15,528,188 04	
Water Account..	123,969 74	
	<hr/>	
	\$15,652,157 78	
N.B. and P.E.I. Ry. Account.	72,357 80	
Interest on purchase price.	5,673 42	
Vale Railway (rental) ..	1,200 00	
	<hr/>	15,731,389 00
		<hr/>
Surplus gross earnings over working expenses..		\$1,074,334 64
		<hr/>
From this surplus, \$4,000 was expended as gratuities, and the		
balance, under authority of 1-2 George V, chapter 8, has been		
charged to Improvements and Betterments and credited to		
equipment renewal account ..		\$1,070,334 64

REVENUE.

The gross earnings, including water line, compare as follows	
with those of the previous year—	
1915-16 (Water Line, \$ 50,619.83) ..	\$14,068,791 41
1916-17 ( " 197,200.58) ..	16,767,386.89
	<hr/>
Increase..	\$2,698,595 48
	<hr/>
The earnings from passenger traffic (rail) compare as follows—	
1915-16 ..	\$4,010,879 58
1916-17 ..	5,587,666 53
	<hr/>
Increase..	\$1,576,786 95
	<hr/>
The earnings from freight traffic, including Water Line, com-	
pare as follows—	
1915-16 (Water Line, \$ 50,619.83) ..	\$ 9,200,339.21
1916-17 ( " 197,200.58) ..	10,743,137 93
	<hr/>
Increase..	\$1,542,798 72
	<hr/>



## SESSIONAL PAPER No. 20

Miscellaneous earnings, including mails and express, compare as follows—

1915-16.. .. .	\$857,572 62
1916-17.. .. .	436,582 43

Decrease.. .. .	\$420,990 19
-----------------	--------------

The rail earnings per mile of railway, compare as follows—

1915-16.. .. .	\$ 9,181 53
1916-17.. .. .	10,913 00

Increase.. .. .	\$1,731 47
-----------------	------------

The earnings per train mile compare as follows—

1915-16.. .. .	\$1.87
1916-17.. .. .	1.94

The number of passengers carried compare as follows—

1915-16.. .. .	4,124,387
1916-17.. .. .	4,537,454

Increase.. .. .	413,067
-----------------	---------

The weight of revenue-producing freight compares as follows—

1915-16.. .. . tons.	5,447,220
1916-17.. .. . "	6,770,224

Increase.. .. . "	1,323,004
-------------------	-----------

A number of statements which give detailed information are appended to this report.

## WORKING EXPENSES.

The working expenses, including Water Line, compare as follows with the previous year—

1915-16 (Water Line, \$ 50,619.83).. .. .	\$12,551,495 84
1916-17 ( " 123,969.74).. .. .	15,652,157 78

Increase.. .. .	\$3,100,661 94
-----------------	----------------

The averages, not including Water Line, compare with those of last year as follows—

Per mile run by engine in 1915-16.. .. .	1.29
" " " 1916-17.. .. .	1.39
" " " 1915-16.. .. .	1.58
" " train 1915-16.. .. .	1.58
" " " 1916-17.. .. .	1.81

The working expenses per mile of railway—

1915-16.. .. .	\$ 8,187 74
1916-17.. .. .	10,226 75

The mileage of the railway for the year 1916-17 was 1,518.39.

During the year ended March 31, 1917, 497,019 ordinary ties were put in the track; 178.39 miles of track ballasted, and a total of 72.76 miles of ditching completed to provide better drainage for the roadbed; 20.50 miles of additional business sidings and 5.12 miles of private sidings were provided. Bridges, culverts, wharves, fences and buildings were repaired, and 49.12 miles of standard woven-wire fence erected.



STORES.

The value of general stores carried over from the previous year was:—

Intercolonial Ry. . . . .	\$1,755,994 47	
New Brunswick and Prince Edward Island Ry. . . . .	3,680 10	
International Railway of New Brunswick. . . . .	15,788 89	
Prince Edward Island Railway. . . . .	54,045 50	
Transcontinental Railway. . . . .	518,850 24	
		\$ 2,348,359 20
The value of stores purchased and charges from other departments. . . . .		16,265,215 35
Total of. . . . .		\$18,613,574 55
The value of stores used and sold. . . . .		13,795,471 81
Balance of general stores on hand, March 31, 1917. . . . .		\$4,818,102 74

PRINCE EDWARD ISLAND RAILWAY.

The length of railway in operation at the end of the year 1916-17 was 275·2 miles.  
The gauge is 3 feet 6 inches.

The cost of road and equipment, March 31, 1916, was... ..	\$10,841,372 44
The expenditure during year 1916-17, was.. . . . .	609,751 71
<hr/>	
Making a total cost on March 31, 1917... ..	\$11,451,124 15
<hr/>	
Gross earnings (including water line, \$185,215.40).. ..	\$630,045 69
Working expenses (including water line, \$246,259.49) ..	833,853 02
<hr/>	
Deficiency.. . . . .	\$203,807 33
<hr/>	
The gross earnings compare with the previous year as follows—	
1915-16.. . . . .	\$390,920 82
1916-17.. . . . .	630,045 69
<hr/>	
Increase... ..	\$239,118 87
<hr/>	
The working expenses compare with the previous year as follows—	
1915-16.. . . . .	\$545,026 62
1916-17.. . . . .	833,853 02
<hr/>	
Increase... ..	\$288,832 40
<hr/>	

The necessary work to maintain the railway in a state of efficiency, the renewing of the track and switch ties, and ballasting of several miles of track, has been carried out.

NEW BRUNSWICK AND PRINCE EDWARD ISLAND RAILWAY.

The cost of road and equipment, March 31, 1916, was.. ..	\$224,211 23
The expenditure during year 1916-17, was.. .. .	46,579 38
	<hr/>
Making a total cost on March 31, 1917.. .. .	\$270,790 66
	<hr/>
The gross earnings and working expenses to March 31, 1917, compare as follows—	
Gross earnings.. .. .	\$38,336 75
Working expenses.. .. .	72,357 80
	<hr/>
Deficiency.. .. .	\$34,021 05
	<hr/>

In addition to amount of working expenses, there was paid \$5,673.42 as interest on purchase price.



SESSIONAL PAPER No. 20

INTERNATIONAL RAILWAY OF NEW BRUNSWICK.

The expenditure on road and equipment, March 31, 1916, was	\$3,937 47
The expenditure during the year 1916-17, was... ..	3,724 98
	<hr/>
Making a total cost on March 31, 1917.. .. .	\$7,662 45
	<hr/>
Gross earnings and working expenses to March 31, 1917, compare as follows—	
Gross earnings.. .. .	\$116,678 67
Working expenses.. .. .	165,107 26
	<hr/>
Deficiency.. .. .	\$48,428 59
	<hr/>

In addition to amount of working expenses, there was paid \$90,000 as interest on purchase price.

VALE RAILWAY.

The Vale Railway, running from New Glasgow to Thorburn, N.S., a mileage of 5.35 miles, was leased May 31, 1916, from the Acadia Coal Company at an annual rental of \$1,200.

NATIONAL TRANSCONTINENTAL RAILWAY.

This line extends from Moncton to Winnipeg and is 2003.03 miles in length, which includes the Grand Trunk Pacific branch line from Fort William to Lake Superior Junction.

The gross earnings and working expenses to March 31, 1917, compare as follows—	
Gross earnings.. .. .	\$5,916,550 99
Working expenses.. .. .	7,206,922 20
	<hr/>
Deficiency.. .. .	\$1,290,371 21
	<hr/>

In addition to amount of working expenses there was paid the sum of \$600,000 on account of rental Lake Superior Branch.

ST. JOHN AND QUEBEC RAILWAY.

The gross earnings and working expenses to March 31, 1917, compare as follows—	
Gross earnings.. .. .	\$70,759 62
Working expenses.. .. .	98,300 42
	<hr/>
Deficiency.. .. .	\$27,540 80
	<hr/>



CANADIAN GOVERNMENT RAILWAYS—Year ending March 31, 1917.

Statement of Averages.	Intercolonial Ry.	Prince Edward Island Ry.	New Brunswick and Prince Edward Island Ry.	International Ry. of N. B.	National Trans-continental Ry.	Canadian Govt. Rys.	St. John and Quebec Ry.
Mileage of railways.....	1,518.39	275.20	36.05	111.30	2,003.03	3,943.97	119.87
Total engine mileage.....	11,178,943	458,376	65,611	86,516	3,942,535	15,731,981	77,597
" train mileage.....	8,557,782	368,495	40,101	78,894	3,367,485	12,412,757	72,531
" car mileage.....	131,874,021	2,143,610	238,604	683,821	69,429,569	201,369,625	396,623
<i>Earnings.</i>							
Transportation—Rail.....	\$ 16,570,186	cts. 424,974	cts. 38,336	\$ 116,678	cts. 5,916,550	cts. 23,066,727	cts. 70,759
" Water.....	\$ 197,206	cts. 185,215				cts. 382,415	
Incidentals.....		cts. 19,856				cts. 19,856	
Total.....	\$ 16,767,386	cts. 630,045	cts. 38,336	\$ 116,678	cts. 5,916,550	cts. 23,468,938	cts. 70,759
<i>Operating Expenses.</i>							
Total.....	\$ 15,652,157	cts. 833,853	cts. 72,357	\$ 165,107	cts. 7,206,922	cts. 23,930,398	cts. 98,300
<i>Ratio of Earnings to Gross Earnings.</i>							
Earnings from transportation (rail).....	p.c. 98.82	p.c. 67.45	p.c. 100.00	p.c. 100.00	p.c. 100.00	p.c. 98.37	p.c. 100.00
" " " (water).....	1.18	29.40				1.63	
" " incidentals.....		3.15					
Gross earnings per mile of railway.....	\$ 10,913.00	cts. 1,616.39	cts. 1,063.43	\$ 1,048.33	cts. 2,953.80	cts. 5,853.38	cts. 590.30
" " engine mile.....	1.48	97	58	1.35	1.50	1.47	91
" " train mile.....	1.94	1.21	96	1.48	1.76	1.86	98
" " car mile.....	12.57	20.75	16.07	17.06	8.52	11.30	17.84
<i>Ratio of Expenses to Gross Earnings.</i>							
.....	p.c. 93.35	p.c. 132.35	p.c. 188.74	p.c. 141.51	p.c. 121.81	p.c. 101.07	p.c. 138.92
<i>Expenses Per Train Mile.</i>							
Total (cents).....	cts. 181.45	cts. 159.46	cts. 180.44	cts. 209.40	cts. 214.01	cts. 189.81	cts. 135.53
<i>Expenses Per Mile of Railway.</i>							
Total rail.....	\$ 10,226.75	cts. 2,135.15	cts. 2,007.15	\$ 1,483.44	cts. 3,598.01	cts. 5,973.72	cts. 820.06
Repairs of locomotives.....	\$ 1,060,224	cts. 34,843	cts. 4,530	\$ 5,925	cts. 697,896	cts. 1,803,420	cts. ....
" freight cars.....	818,898	cts. 9,357	cts. 1,418	4,179	cts. 493,522	cts. 1,327,376	cts. ....
" passenger cars.....	466,008	cts. 16,525	cts. 1,103	2,557	cts. 255,352	cts. 721,547	cts. ....
Cost of repairs per locomotive.....	2,797.43	cts. 1,124.00	cts. 1,510.06	1,481.49	cts. 4,417.07	cts. 3,136.38	cts. ....
" " freight car.....	75.83	cts. 17.01	cts. 40.52	25.80	cts. 74.33	cts. 73.00	cts. ....
" " passenger car.....	882.59	cts. 280.10	cts. 367.77	255.75	cts. 2,477.40	cts. 1,038.20	cts. ....



SUMMARY of the Passenger and Freight Traffic on the Canadian Government Railways and Steamers.  
Year ending March 31st, 1917.

	Intercolonial Railway.	Prince Edward Island Railway.	Ocean Steamships to Mainland.	New Brunswick and Prince Edward Island Railway.	International Railway of N.B.	National Transcontinental Railway.	Canadian Government Railways.	St. John and Quebec Railway.
Passenger Traffic . . . . .	5,587,666.53	177,888.85	69,113.52	8,682.74	37,015.11	824,713.53	6,705,080.28	28,733.00
Freight Traffic . . . . .	10,545,937.35	219,442.74	108,508.13	30,834.71	93,866.04	5,643,869.19	16,642,458.16	50,385.99
Mails, Express, etc. . . . .	436,582.43	47,498.70	7,593.75	3,766.69	2,734.82	166,733.65	664,910.04	2,206.64
Total . . . . .	16,570,186.31	444,830.29	185,215.40	43,284.14	133,615.97	6,635,316.37	24,012,448.48	81,325.63
Ocean Service . . . . .	197,200.58						382,415.98	
Total . . . . .	16,767,386.89	444,830.29	185,215.40	43,284.14	133,615.97	6,635,316.37	24,209,649.06	81,325.63
Less Hire of Equipment . . . . .				4,947.39	16,937.30	718,765.38	740,650.07	10,566.01
Net Revenue . . . . .	16,767,386.89	444,830.29	185,215.40	38,336.75	116,678.67	5,916,550.99	23,468,998.99	70,759.62
<i>Passenger Statement.</i>								
Local Traffic—								
Number of Passengers . . . . .	4,180,134	383,386	48,712	14,434	32,916	645,513	5,305,095	43,143
Mileage . . . . .	162,368,608	9,049,535	1,903,929	285,083	1,347,003	16,201,965	191,156,123	1,147,093
Through Traffic—								
Number of Passengers . . . . .	357,320	18,250			592	82,913	459,075	781
Mileage . . . . .	164,468,120	881,701			40,818	33,119,148	198,509,787	9,925
Total Number of Passengers . . . . .	4,537,454	401,636	48,712	14,434	33,508	728,426	5,764,170	43,924
Total Mileage . . . . .	326,836,728	9,931,236	1,903,929	285,083	1,387,821	49,321,113	389,665,910	1,157,018
<i>Freight Statement.</i>								
Local Traffic—								
Local Tons . . . . .	4,297,773	106,688	75,314	67,533	88,571	969,524	5,605,403	33,510
Local Mileage . . . . .	846,631,987	3,693,402	3,340,376	1,437,952	3,583,379	320,700,716	1,179,387,812	988,801
Through Traffic—								
Through Tons . . . . .	2,472,451	43,413			36,473	2,191,736	4,744,073	19,986
Through Mileage . . . . .	962,839,340	2,047,215			2,781,576	865,088,697	1,832,756,828	1,129,352
Total Tons . . . . .	6,770,224	150,101	75,314	67,533	125,044	3,161,260	10,349,476	53,496
Total Mileage . . . . .	1,809,471,327	5,740,617	3,340,376	1,437,952	6,364,955	1,185,789,413	3,012,144,640	2,118,153



8 GEORGE V, A. 1918

## REPORT OF C. B. BROWN, CHIEF ENGINEER.

## HALIFAX OCEAN TERMINALS.

The chief engineer reports that the works under contract have been steadily continued and excellent progress has been made both on the railway and the docks.

*Grading.*—Grading has been completed, and between Rockingham and Fairview, Terminal Junction Yards, the sea slopes have been riprapped to the extent of 9,000 feet.

Raising the main line to new elevation was commenced in May, and 85 pound rails were laid on part of the new inbound line in September. Tracks were laid in terminal yards to provide accommodation for about 1,000 additional cars.

On the main line, from Fairview to Young avenue the grading was completed, as well as all other work, and the line put into service.

Between Young avenue and Halifax harbour, all the excavation on the main line and the lower benches of the proposed freight yard was completed. Several tracks, with a capacity of about 400 cars, were laid.

*Breakwater, Point Pleasant.*—This breakwater has been satisfactorily completed.

*Drainage.*—Drainage at Prince Arthur street, also culvert No. 290, and at Point Pleasant yard was completed. The culverts in terminal yard were extended, and the drainage required at stations 115 to 125 partly completed. The Coburg and the Pleasant street sewers were completed, and the Atlantic street sewer is 10 per cent complete.

*Houses.*—Where necessary, houses were moved, placed on new foundations, and necessary repairs and alterations made.

*Bridges.*—There are twelve concrete and reinforced-concrete overgrade bridges and subways under construction, of which two concrete arches have been completed. The remainder will be completed as soon as the construction material is received.

*Dredging—Basin No. 1.*—Dredging for the 30-foot and 35-foot depths has been completed, and the 45-foot depth is dredged to 40 feet.

*Basin No. 2.*—The northern half is complete to the 45-foot level, and the southern half is 80 per cent complete, as well as the dredging east of the bulkhead passenger landing quay.

*Foundations.*—The dredging for foundations is complete, 201,403 cubic yards having been dredged out. During the year, 4,227 lineal feet of foundations were prepared. With the exception of about 400 lineal feet, all the foundations of the quay walls are prepared ready for the concrete pedestals.

*Quay Walls.*—Some 2,900 lineal feet were built to the top of the block work, and 1,654 lineal feet of the granite work of the quay was set to full height. About 100,000 cubic yards of borrowed filling has been placed in pier "A," and about 30,000 cubic yards behind the bulkhead passenger landing quay.

About 75 per cent of the granite for the face work of the quay walls is dressed.

*Concrete Work.*—The following concrete blocks have been made: Shells, 1,578; total volume concrete cubic yards, 46,246; total pounds steel used, 7,540,691; 199 concrete key-posts and 580 piles were made. The key posts contain 481 cubic yards of concrete and 237,800 pounds of reinforcing steel, while the piles contain 1,184 cubic yards of concrete and 591,000 pounds of steel.



SESSIONAL PAPER No. 20

*Steamship Accommodation.*—Three steamship berths, one of 500, one of 600, and one of 700 feet, have been in use during the winter. Two of these are equipped with temporary sheds of 440 and 396 feet each in length by 90 feet in width.

*Plant.*—The plant in use has been increased by the addition of a 150-ton locomotive crane.

Notwithstanding difficulties in transportation, a very successful year's work was accomplished, the contract having been completed to the extent of 68 per cent.

ROADBED AND TRACK—Table of Mileages.

	Main Line.	Second Main Line.	Passing Sidings.	Other Sidings and Spurs.
	Miles.	Miles.	Miles.	Miles.
Intercolonial Ry.....	1,518·39	66·92	146·55	378·88
Prince Edward Island Ry.....	275·20	.....	7·95	25·93
National Transcontinental Ry.....	1,811·28	9·29	130·20	203·72
Grand Trunk Pacific Ry. (Leased Lines).....	191·75	.....	20·69	42·07
New Brunswick and Prince Edward Island Ry. ....	36·05	.....	·93	3·37
International Ry. of N.B.....	111·30	.....	1·13	4·29
St. John and Quebec Ry....	119·87	.....	3·37	4·63
Total.....	4,063·84	76·21	310·82	662·89

MILEAGE of the various weights of rails.

Weight.	I. C. R.	Trans-continental.	P. E. I. Ry.	N. B. and P. E. I. Ry.	International	Vale Ry.	G. T. P. Ry.	St. J. and Q.
50 lb.....	4·40	.....	3·6	.....	.....	.....	.....	.....
52 ".....	.....	.....	95·1	.....	.....	.....	.....	.....
56 ".....	19·48	3·50	40·1	15·69	14·1	3·35	.....	.....
58 ".....	.....	.....	134·2	.....	.....	.....	.....	.....
60 ".....	.....	.....	.....	.....	52·8	.....	.....	.....
67 ".....	231·31	1·16	1·6	.....	44·4	2·0	.....	.....
70 ".....	19·75	.....	.....	.....	.....	.....	.....	.....
72 ".....	.....	.....	.....	.....	.....	.....	4·34	.....
75 ".....	.....	.....	.....	.....	.....	.....	6·00	.....
80 ".....	1,037·13	1,819·19	0·6	20·36	.....	.....	181·41	119·87
85 ".....	273·24	.....	.....	.....	.....	.....	.....	.....

*New and relaid rails laid.*—The main line of the I.C.R. was laid with 85-pound rails for a distance of 81½ miles and 8·96 miles were relaid with 80-pound relay rails; 3·59 miles were relaid on the main-line branch lines with 67-pound relay rails, and three-tenths of a mile with 80-pound relay rail.

*New Brunswick and Prince Edward Island Railway Line.*—11·12 miles were relaid with 80-pound relay rail, releasing 56-pound and 67-pound rail.

*The Vale Railway* was relaid with 67-pound rail for 2 miles.



8 GEORGE V, A. 1918

*Grand Trunk Pacific Railway.*—The main line was relaid with new 80-pound rail for 4.53 miles.

TIE Renewals, Ballasting, New Sidings, Ditches, etc.

Railways.	Tie Renewals.	Ballast- ing.	Ditches.	Widen Banks.	Tile Drain.	Protec- tion to embank- ments and cuts	New Sidings	
							Passing and Busi- ness.	Private.
	No.	Miles.	Miles.	Miles.	Ft.	Ft.	Ft.	Ft.
Intercolonial. . . . .	497,019	178.39	72.76	66.99	2,600	2,500	100,756	27,054
P. E. Island Ry.....	21,715	9.2	5.50			700		856
Nat. Transcontinental Ry.....	558,842	61.5	39.34	0.73	11,876	Several points.	6,158	48,529
N. B. & P. E. I. Ry.. . . . .	9,840	12.0						115
International of N.B. . . . .	35,619							2,731
Vale Ry.....	2,112							7,011
G. T. Pac. Ry. . . . .	51,384	10.0	0.75				2,240	795
	1,176,531	271.09	109.35	67.72	14,476	3,200	109,154	87,091

The cleaning out of 20 miles of ditches, the building of 1,502 track feet of private sidings on the St. John and Quebec Railway are not included in the above statement.

WATER SERVICE.

*Intercolonial Railway.*—All along this railway the water service has received the necessary attention to keep it in efficient order. The tanks and piping were repaired where necessary. A 40,000-gallon tank was installed at North Sydney and a 15-horse-power gasoline pump installed at the Newcastle reservoir. A water meter was installed at Lévis, and a 4-inch Warren steam pump installed at St. Pascal.

*National Transcontinental Railway.*—A steam pump and a 5,000-gallon tank was installed near Cap Rouge, Que. At Transcona 1,000 feet of 6-inch cast-iron pipe was laid to new elevator. The 50,000-gallon tank, at Glendyne, which was destroyed by fire, was replaced by taking down the tank in the N.T.R. yard at Moncton and re-erecting it at Glendyne. Other necessary light repairs and alterations have been carried out.

*Grand Trunk Pacific Railway.*—A 4-inch cast-iron water pipe, 1,300 feet long, was laid to the coach and repair yard at Mission.

BUILDINGS.

*Intercolonial Railway.*—The necessary additions and alterations, repairs and painting to buildings, stations, and freight sheds have been carried out.

At Rivière-du-Loup, general repairs and painting to power-house, round-house, machine shop, and stores building were carried out.

*Prince Edward Island Railway.*—Coal shed floors renewed at Charlottetown, and the part of the stores building which had been destroyed by fire rebuilt. Other minor repairs were also carried out.

*National Transcontinental Railway.*—Four section tool-houses were erected, and seven shelter stations. The station buildings destroyed by fire at Casey and St. Anselme were rebuilt, and a portable station built at Smooth Rock Falls, Ont.



## SESSIONAL PAPER No. 20

A contract has been given for five double cottages at Cochrane and five at Grant. Those at Cochrane are nearly finished.

A temporary wooden grain elevator 46 by 32 feet, with the necessary cleaning machinery, has been established at Transcona.

The machinery of this elevator will be used in a 1,000,000-bushel elevator now building, and soon to be ready.

Standard concrete rail-racks have been built at one mile intervals in districts 2 and 3.

*Grand Trunk Pacific Railway.*—The necessary maintenance repairs were made to all buildings requiring them.

## TERMINAL IMPROVEMENTS.

*Intercolonial Railway.*—The capacity of the Ste. Rosalie yard was increased by 12,900 lineal feet of track (230 cars), and a new coaling crane and air compressor installed. Alterations and improvements were also carried out at Rivière-du-Loup, and Chaudière Junction, where 27,900 lineal feet of siding were installed (580 cars). General repairs and improvements were also carried out at this point.

Moncton: Yard capacity increased by 15,840 feet (316 cars), and storage tracks extended 1,000 feet. A 528-ton ice-house was erected near the new shops. Several alterations and improvements to electric light and telephone circuits were also carried out.

St. John: Two berths adjoining long wharf were dredged to give 30 feet of water at low tide. A contract was entered into for a 500,000-bushel reinforced concrete elevator, and work on foundation started. The heating of the station was improved, and the electric lighting of the rail yard increased. A temporary flour shed built.

Slight alterations and improvements have also been carried out at Pointe du Chêne, Point Tupper, Mulgrave, and Stellarton.

Truro: 14,500 feet of sidings (282 cars) were installed, and general repairs to coaling and car-heating plant carried out.

Halifax: old pier No. 2, damaged by fire in 1916, was rebuilt on the north and the south sides, giving accommodation for two tracks. The power-house, engine-house, heating, and car-cleaning plants, freight and cattle sheds, etc., elevator grain chutes, and 6 piers received general repairs.

Dartmouth, S.D.: Railway owned telephones were installed at three stations.

*Prince Edward Island Railway.*—Summerside: Wharves damaged by storm are being rebuilt. Georgetown wharf, damaged by ice, has been rebuilt.

*National Transcontinental Railway.*—Several additions and improvements are being constantly carried out on this line, of which the briefest report is herewith made.

Leonard shops: Two boiler feed pumps installed, and a feed water heater.

Bridge: Considerable machinery from the Transcona shops were erected at this point. It consists of three lathes, one crane, one pipe machine, one shaper, and other machinery. Six hydrant houses were installed, and additional hose furnished to extent of 1,250 feet.

Cochrane: Car-repair facilities have been improved. Siding for the auxiliary crane constructed. Cross-over and coal tracks built. Fire protection was also increased.

At Hearst, Grant, Armstrong Fitzpatrick, Parent, Doucet, and O'Brien: The fire protection was increased by the installation of several hydrants and several thousand feet of hose.

Graham: Wooden foundations under five machines in the machine shop were replaced by concrete foundations.



8 GEORGE V, A. 1918

Redditt: A cross-over line was built to reduce time in changing eastbound passenger engines. A coaling track was constructed on the south side of the coal chute. A gasolene-driven electric generator was also installed.

Transcona: The work on the 1,000,000-bushel elevator is 25 per cent complete; 2,100 feet of railway track and a 6-inch water supply pipe have been built to serve this elevator.

The electric light system, the compressed air system, and the steam line to the passenger-coach yard have all been repaired and improved.

Moncton (N.T.R.): A 50-k.w. engine generator set and switchboard has been installed after being removed from Edmundston, where arrangements were made for the purchase of current from an outside source.

*New Brunswick and Prince Edward Island Railway.*—Cape Tormentine: Terminal facilities to handle Prince Edward Island traffic when car ferry is put into operation were commenced.

*Grand Trunk Pacific.*—At Mission terminals a coach storage track, 1,000 feet long, with water service for watering and cleaning cars, has been built. Five car storage sidings (586 feet) were built.

#### SURVEYS.

Surveys and track profiles have been completed on the I.C.R. Dartmouth S.D. to the extent of 67 miles, and also 3.48 at other points: Forty-two stations, grounds, and yard plans have also been surveyed; 398 bridges have been surveyed.

*Prince Edward Island Railway.*—One hundred and eighty-one miles of road have been resurveyed, 8 miles of track profile completed, and two station-grounds plans made.

*New Brunswick and Prince Edward Island Railway.*—Resurveys have been made of twelve station-grounds and three yard plans made.

#### TRACK CENTERING.

The track has been recentred and curves spiralled for 134 miles on the Intercolonial Railway and 18 miles on the Prince Edward Island Railway.

#### FENCING ERECTED.

*Intercolonial Railway.*—Forty-nine miles new wire fence.

*Prince Edward Island Railway.*—Fifteen miles new wire fence.

*National Transcontinental Railway.*—5.68 miles new wire fence and 9.49 miles snow fencing.

*Grand Trunk Pacific Railway.*—Forty-six miles new wire fence.

#### DAMAGES.

No damages of very considerable extent took place either by flood or fire. The new washouts which occurred were soon repaired to cause the least possible delay to traffic.

#### BRIDGES AND CULVERTS.

The bridges and culverts of the railways are being systematically repaired, strengthened, or renewed where necessary, steel and concrete being mostly used for renewals; 109 culverts were replaced on the I.C.R., 12,313 feet of culvert piping having been made by the railway forces. At mile 60, Winnipeg S.D., a 792-foot frame trestle was replaced by fill and 36-inch pipe culvert.



## SESSIONAL PAPER No. 20

## SUNDRIES.

A new turntable was installed at Boiestown, I.C.R. Ash pits at Ste. Rosalie and Chaudière Junction and Island yard were extended. A new track scale installed at Denmark, and others at Harvey Junction, La Tuque and St. Leonards, National Transcontinental Railway. The electrical lighting has been added to or improved where necessary.

## SIGNALS AND INTERLOCKING.

A mechanical interlocking plant was erected to protect the swing span of Grand Narrows bridge, and another at Ashton Junction, I.C.R. Fifty-three standard two-direction train-order signals were installed, and all other signals and crossings received the necessary care to be kept in good order.

## CAR FERRIES.

These steamers have received only slight repairs or alterations, such as repairs to heating or sanitation systems mostly. The bridge of steamer *Scotia No. 1* was moved forward to give better control of the vessel. Repairs to machinery were made to steamer *Scotia No. 2*.

## REPORT OF G. R. JOUGHINS, SUPERINTENDENT OF ROLLING STOCK.

## Equipment Renewals:—

62 locomotives, 55 of which were new, and  
7 second-hand.

## N.T.R. Consolidated Fund:—

51 locomotives, 30 of which were new, and  
21 second-hand.

## Passenger Cars—Equipment Renewals:—

18 sleeping cars, 8 new and 10 second-hand;  
2 parlor, second-hand;  
2 Dining, second-hand;  
3 colonist, second-hand;  
2 first-class coaches, second-hand;  
4 postal; 2 new, 2 second-hand;  
1 baggage, second-hand;  
10 hospital cars, second-hand; making a  
total of 42.

## N.T.R. Consolidated Fund:—

6 sleeping,  
6 lining,  
7 colonist,  
3 first-class coaches,  
4 second-class,  
5 baggage; all second-hand, making a  
total of 31.

## Freight Cars—Equipment renewals:—

108 Hart convertible cars; second-hand;  
1 Gas tank and car, new.

## N.T.R. Consolidated Fund:—

200 new stock cars;  
537 new steel-frame-50-ton box cars;  
239 Hart convertible cars, second-hand;  
131 Platform, second-hand;  
58 box, second-hand;  
3 gondolas, second-hand;  
2 steel coal cars, second-hand.

## Work Equipment—Equipment Renewals:—

10 all-steel snow ploughs, new;  
1 rail unloader, new;  
2 ballast side ploughs, second-hand;  
2 steam shovels, second-hand;  
1 Lidgerwood unloader, second-hand;  
1 center ballast plough, second-hand.

## Consolidated Revenue Fund:—

10 all-steel snow ploughs, new;  
2 wrecking cranes, new;  
2 rail unloaders, new;  
3 side ploughs, second-hand;  
1 center ballast plough, second-hand.  
4 ballast ploughs, second-hand;  
3 Rodger spreaders, second-hand;  
3 Jordan spreaders, second-hand;  
7 steam shovels, second-hand;  
1 track layer, second-hand;  
1 rotary plough, second-hand;  
1 wrecking crane, second-hand;  
1 steam locomotive crane, second-hand.

## General Statement of work done in the Canadian Government Railways' shops during year ending March 31, 1917:—

## Locomotive Department:—

325 Engines received repairs.  
28 Engines were converted to superheat.  
Steam shovels, ditchers, unloaders, pile-drivers, cranes and other machinery received the necessary repairs.

## Car Department:—

50 new flat cars were built at Moncton.  
10 wrecking outfits were built at Moncton.

2 rail unloaders were built at Moncton.  
255 Other cars were either rebuilt or converted to other styles. Several freight and passenger cars received the necessary repairs. Other cars of all descriptions were also brought into proper condition for traffic.  
744 Freight cars were equipped with safety appliances.

A force of about two thousand men is employed to keep the rolling stock into proper condition for traffic.



CANADIAN GOVERNMENT RAILWAYS.

EASTERN AND WESTERN LINES —Statement showing the number of Locomotives and the various classes of other Rolling Stock on the Line, March 31, 1916, and March 31, 1917.

	Passenger Cars.											Freight Cars.																		
	Locomotives.	Sleeping cars.	Parlour cars.	Dining cars.	Colonist cars.	First class passenger cars.	Second class passenger cars.	Postal cars.	Baggage cars.	Hospital cars.	Vision test cars.	Box baggage cars.	Air brake instruction cars.	Steam motor cars.	Total passenger cars.	Box Cars.	Refrigerator cars.	Platform cars.	Pulp wood cars.	Oil tank cars.	Hopper cars.	Gondola cars.	20-ton coal cars.	Hart (1) steel dump cars.	Stock cars.	Hart convertible dump cars.	Pit cars.	Vans.	Total freight cars.	
On hand, serviceable and repairing, Mar. 31, 1916.	433	66	10	21	65	169	96	36	75	..	..	26	1	1	566	9913	190	2742	48	54	494	4	169	526	168	300	4	171	14783	
To be replaced, March 31, 1916	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	186	8	497	4	1	146	1	207	..	17	..	..	13	1080	
Total equipment, March 31, 1916	434	66	10	21	65	169	96	36	75	..	..	26	1	1	566	10099	198	3239	52	55	640	5	376	526	185	300	4	184	15863	
Purchased and built during the year on	55	8	..	..	..	..	..	2	1	10	..	..	..	..	42	..	..	50	..	1	..	..	..	..	..	108	..	..	..	
Equipment Renewals Account. ....	7	10	2	2	3	2	..	2	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	200	..	..	..	..	159	
Purchased during the year on Consolidated Revenue Account.	30	..	..	..	..	..	..	..	..	..	..	..	..	..	31	537	..	..	..	..	..	3	..	2	..	239	..	6	1176	
Rebuilt on Consolidated Revenue Account from box to vans 65, to stores car 1	21	6	..	6	7	3	4	..	5	..	..	..	..	..	..	58	..	131	..	..	..	..	..	..	..	..	..	..	..	
Rebuilt on Equipment Renewals Account from box to vans 25.	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	66	..	..	..	..	..	..	..	..	..	..	..	66	..	
Converted in shops: box to boarding 11, to shanty 10, to pulp wood 175, to road repairs 7	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	25	..	..	175	..	..	..	..	..	..	..	25	..	..	
Total 203.	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	203	..	..	49	..	..	..	..	..	..	..	..	..	..	175
From flat to cinder cars 49.	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	203
Converted in shop, passenger to vision test 1.	..	..	..	..	..	1	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	49
Sleeper to baggage 2, parlour to baggage 2.	..	2	2	..	..	..	..	..	4	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
*Total equipment, March 31, 1917.	547	88	10	29	75	173	100	40	85	10	1	26	1	1	639	10400	198	3371	227	56	640	8	376	528	385	647	4	281	17121	







CANADIAN GOVERNMENT RAILWAYS.—Concluded.  
EASTERN AND WESTERN LINES.—Statement showing the number of Locomotives and the various classes of other Rolling Stock on the Line, March 31, 1916, and March 31, 1917.—Concluded.

	Work Equipment.																																		
	Auxiliary cars.	Store supply cars.	Pintsch gas cars.	Snow plow, common.	Snow plow, wing.	Snow plow, rotary.	Snow plow, double track.	Snow plow, double end.	All steel plows, snow.	Flangers.	Steam cranes.	Ballast spreaders "Rogers."	Ballast trimmers.	Centre ballast plows.	Side ballast plows.	Ballast unloaders.	Ballast spreaders, wing.	Concrete mixers.	Sand blast machines.	Well boring machines.	Ditchers.	Steam derricks.	Hand derricks.	Portable rail sawing and boring machines.	Pile drivers.	Survey and inspection cars.	Rail unloaders.	Wrecking cars.	Boarding cars.	Steam shovels.	Track layer.	Cinder cars.	Total work cars.		
On hand, serviceable and repairing, March 31, 1916.....	23	1	2	47	27	2	2	1	..	54	22	2	1	7	5	4	1	4	1	1	1	1	1	7	1	2	16	2	71	62	3	..	..	373	
To be replaced, March 31, 1916.....	..	..	..	4	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	5		
Total equipment, March 31, 1916 .....	23	1	2	51	27	2	2	1	10	54	22	2	1	7	5	4	1	4	1	1	1	1	1	7	1	2	16	2	71	62	4	..	..	378	
Purchased and built during the year on Equip- ment Renewals Account.....	..	..	..	..	..	..	..	..	..	..	..	..	..	1	2	1	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	17	
Purchased during the year on Consolidated Revenue Account.....	1	..	..	..	..	..	1	..	10	..	1	5	5	7	6	..	1	1	..	..	..	..	..	..	..	..	..	2	59	7	1	..	..	108	
Rebuilt on Consolidated Revenue Account from box to vans 65, to stores car 1.....	1	1	..	2	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1		
Rebuilt on Equipment Renewals Account from box to vans 25.....	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	11	..	..	..	11		
Converted in shops: box to boarding 11, to shanty 10, to pulp wood 175, to road repairs 7.....	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	11	..	..	..	..	..	..	..	..		
Total 203.....	23	3	2	53	27	2	3	1	20	54	23	7	1	13	14	11	1	5	1	1	1	1	1	7	1	2	27	5	71	132	13	1	49	..	575
From flat to cinder cars 49.....	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	
Converted in shop, passenger to vision test, 1.....	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	
Sleeper to baggage 2, parlour to baggage 2.....	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	
Total equipment, March 31, 1917.....	23	3	2	53	27	2	3	1	20	54	23	7	1	13	14	11	1	5	1	1	1	1	1	7	1	2	27	5	71	132	13	1	49	..	575







PRINCE EDWARD ISLAND RAILWAY.

STATEMENT showing the number of Locomotives and the various classes of other Rolling Stock on the line, on March 31, 1916 and March 31, 1917.

	Locomotives.	Passenger Cars.						Freight Cars.								Work Cars.					
		1st class passenger cars.	2nd class passenger cars.	Combined 2nd class and baggage cars.	Postal and smoking cars.	Combined postal and baggage cars.	Baggage cars.	Total passenger cars.	Box cars.	Refrigerator cars.	Stock cars.	Oil tank cars.	Hart convertible.	Coal cars.	Platform cars.	Vans.	Total freight cars.	Snow plows.	Flangers.	Steam shovels.	Total work cars.
On hand, serviceable and repairing March 31, 1916	22	18	9	5	4	3	6	45	308	3	28	1	15	11	150	3	519	9	3	1	18
To be replaced at March 31, 1916	9	5	4	2	1	1	2	11	5	...	...	...	...	1	4	1	11	2	...	...	2
Total equipment at March 31, 1916	31	23	13	7	4	4	8	59	313	3	28	1	15	12	154	4	530	11	3	1	20
To be replaced at March 31, 1916 as above	9	5	4	2	1	1	2	14	5	...	...	...	...	1	4	1	11	2	...	...	2
Condemned during the year 1917	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Total condemned at March 31, 1917	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Rebuilt during the year	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
To be replaced at March 31, 1917	9	5	4	2	1	1	2	14	5	...	...	...	...	1	4	1	11	2	...	...	2
Add serviceable and repairing	22	18	9	5	4	3	6	45	308	3	28	1	15	11	150	3	519	9	3	1	18
Total equipment at March 31, 1917	31	23	13	7	4	4	8	59	313	3	28	1	15	12	154	4	530	11	3	1	20



SESSIONAL PAPER No. 20

## REPORT OF J. E. LONG, SAFETY ENGINEER.

Meetings have been held monthly at different points on the railway, which has resulted in keeping up the interest in safety work. The correction of unsafe conditions and practices is being attended to promptly.

The grave danger of careless habits in the discharge of duties has been demonstrated by moving pictures at all important points, to over 10,000 employees, with most excellent results.

During the year the reports show that there were only thirteen employees killed and 629 injured. No passengers were reported killed, and only twenty-one reported injured.

A weekly bulletin service offering many suggestions for increased safety measures is being maintained.



8 GEORGE V, A. 1918

CANADIAN GOVERNMENT EMPLOYEES' RELIEF AND INSURANCE ASSOCIATION.

STATEMENT of Receipts and Expenditure during the year ended March 31, 1917.

	\$	cts.
Credit balance on June 30, 1916.....	56,890	59
The total receipts for the year from all sources were.....	135,671	05
	192,561	64
The total expenditures were.....	129,914	22
	62,647	42
Leaving a credit balance of.....	10,250	00
Less estimated outstanding liabilities.....		
Net surplus, June 30, 1917.....	52,397	42

Sickness and Accident Fund.

The expenditures in this fund last year were \$51,924.42, and this year they are shown to be \$53,556.97, an increase of \$1,632.55. A credit balance of \$39,085.82 is shown in this fund on June 30, 1917.

Temporary Employees' Accident Fund.

The expenditures in this fund during the year are shown to have been .....\$ 18,293 50

Death and Total Disability Fund.

This statement shows that one hundred and twenty-four death and total disability claims were assessed and paid during the year.

Eighty-seven death claims due to natural causes, aggregating.....	\$	36,750	00
Fourteen death claims due to accidental injuries, aggregating.....		4,250	00
Seventeen death claims due to war, aggregating.....		6,500	00
	\$	47,500	00
Six total disability claims, aggregating.....		4,500	00
	\$	52,000	00
Amount paid last year from this fund was.....		53,000	00

Certified Correct,

C. B. TRITES,  
Secretary.

W. P. SEARS,  
Auditor.

STATEMENT showing the amount credited to the Canadian Government Railways Employees' Relief and Insurance Association, by the Canadian Government Railways, during the year ended June 30, 1917.

Amount of premiums collected from the Canadian Government Railways' pay lists.....	\$	112,418	23
Premiums collected from railways' vouchers.....		738	59
Annual contribution from the Canadian Government Railways.....		13,333	32
Canadian Government Railways' cash premiums.....		10	98
Total.....	\$	126,501	12



SESSIONAL PAPER No. 20

# INTERCOLONIAL AND PRINCE EDWARD ISLAND RAILWAYS EMPLOYEES' PROVIDENT FUND.

STATEMENT of Receipts and Expenditure during the year ended March 31, 1917.

	\$ cts.	\$ cts.
Balance at the credit of the Fund on March 31, 1916.....		348,502 74
The contributions made by the Employees during the year, being one and one-half per cent of their monthly salary and wages, were.....	163,141 28	
The contributions made by the Can. Government Railways were.....	100,000 00	263,141 28
Amounts received for refunds, etc.....		973 83
Interest accrued (at three per cent).....		9,555 18
		622,173 03
<p>The amount contributed by the Employees is shown to exceed by \$63,141.28 the amount contributed by the Railways.</p> <p>By reference to Section No. 4 of the Provident Fund Act, it will be noted that the maximum sum the Railways are authorized to contribute to the Fund in any one year must not exceed \$100,000.</p> <p>The Expenditures were:</p>		
For Retiring Allowances.....	257,888 52	
For contributions refunded in cases of deceased employees.....	5,620 69	
" " " which were deducted in error.....	3,276 82	
" " " to discharged employees, etc. ....	744 91	
Medical examinations for probationers entering the service, etc.....	2,744 00	
" " " employees retiring from service.....	103 50	
For Election Expenses.....	888 69	
" Salaries and Travelling Expenses, Secretary's Office, and proportion of salary Chief Medical Officer.....	6,293 63	
" Board Members—Time lost and Travelling Expenses.....	8 16	
" Stationery, Printing, Postage, etc., etc.....	1,050 39	278,619 31
Balance to the credit of the Fund on March 31, 1917.....		343,553 72
It will be noted by the above Statement of Receipts and Expenditures that the amount of the contributions received from the Railways and from the Employees during the year, were.....	263,141 28	
And the Expenditures were.....	278,619 31	
Showing that during the year the Expenditures exceeded the Receipts.....	15,478 03	
The gross surplus, including interest, to the credit of the Fund on March 31, 1917, was.....		343,553 72

C. A. HAYES, *Chairman.*C. B. TRITES, *Secretary.*



REPORT OF THE COMPTROLLER AND TREASURER.

CAPITAL ACCOUNT.—CANADIAN GOVERNMENT RAILWAYS.

1916.	Dr.	\$	cts.	1916.	Cr.	\$	cts.
Mar. 31	<i>Intercolonial Railway</i>			Mar. 31	By Dominion of Canada, I.C.R.	115,766	560 24
	To Cost of Intercolonial Railway to March 31, 1916.				Dominion of Canada, P.E.I. Ry.	10,841,372	44
	Anticreepers and tie plates.	17,777	71		Dominion of Canada, N.B. & P.E.I. Ry.	224,211	28
	Branch line—Sunny Brae to Mulgrave.	867	90		Dominion of Canada, Intl. Ry.	3,937	47
	Bridges—to strengthen.	235,222	30				
	Dartmouth to Deans branch line.	112,235	87				
	Halifax—docks and wharves.	46,000	00				
	Halifax—New terminal facilities.	3,591,563	66				
	Installation of block system in connection with operation.	3,734	03				
	Levis—Improvements at.	3,368	92				
	Moncton—Locomotive and car shops with equipment.	25,519	27				
	Moncton—Elimination of level crossings.	9,398	72				
	Original construction.	28,214	52				
	Permanent farm crossings and culverts.	2,623	25				
	Power plants—Increased facilities.	1,000	00				
	Safety appliances for equipment.	23,315	52				
	St. John—Spur line to Courtenay Bay.	52,146	14				
	Surveys and inspections.	18,926	22				
	Increased accommodation and facilities along the line.	208,383	19				
	Pay claim of M. E. Keefe on Halifax engine house.	11,172	52				
	Water supply—to increase.	2,303	59				
	Grain elevator—St. John.	59,273	46				
	Purchase of steamer—"Northumberland".	54,000	00				
		4,507,046	69				
	Cr.						
	By Mulgrave to provide car ferry, previous year's expenditure.		\$16,294 13				
	Halifax—Increased accommodation.	16,574	13				
						4,400,472	56
	Dr.						
	<i>Prince Edward Island Railway.</i>						
	To Cost of Prince Edward Island Railway to March 31, 1916.	10,841,372	44				



SESSIONAL PAPER No. 20

To Bridges—to strengthen. . . . .	\$ 3,046 70				
Surveys and inspections.....	1,000 00				
Increased accommodation and facilities along the line.....	1,028 15				
Provide car ferry and necessary connections.. . . .	604,676 86	609,751 71	11,451,124 15		
<i>New Brunswick and Prince Edward Island Railway.</i>					
To Cost of New Brunswick and Prince Edward Island to March 31, 1916.....	224,211 28				
Bringing line up to Intercolonial branch line standard .....	46,579 38		270,790 66		
<i>International Railway.</i>					
To Cost of International Railway, March 31, 1916.				1917.	
Bringing line up to Intercolonial branch line standard .....	3,937 47			Mar. 31	
	3,724 98		7,662 45		
<i>National Transcontinental Railway.</i>					
To Grain elevator—Winnipeg terminals.....	279,949 83		279,949 83		8,944,786 50
Consolidated revenue during the year.....	.....		3,514,308 04	By Dominion of Canada .....	
			135,780,867 93		135,780,867 93



CANADIAN GOVERNMENT RAILWAYS.  
REVENUE ACCOUNT.

Working Expenses	\$ cts.	Earnings.	\$ cts.
Maintenance of way and structures..	4,727,351 83	Freight.....	16,839,658 74
Maintenance of equipment.....	4,426,200 05	Passenger .....	6,705,080 28
Traffic expenses .....	418,425 03	Mail and express..	1,066,502 98
Transportation—Rail line.....	13,227,794 53		24,611,242 00
Transportation—Water line.....	370,229 23	Less miscellaneous.....	1,142,243 01
Miscellaneous operations.....	316,661 94		23,468,998 99
General expenses.....	443,735 45	Balance.....	1,158,272 49
Rental of leased lines .....	696,873 42		24,627,271 48
	24,627,261 48		

CANADIAN GOVERNMENT RAILWAYS.  
GENERAL BALANCE.

DR.	\$ cts.	CR.	\$ cts.
To Cash .....	02	By Dominion of Canada.....	6,311,368 39
General stores.....	4,818,102 74	Equipment Renewal Account...	1,661,208 89
Cash in transit .....	49,343 29	Intercolonial and Prince Edward	
Loss and damage freight suspense.	31,071 05	Island Railway Employees	
Unclaimed freight.....	3,522 64	Provident Fund .....	343,553 72
Auditor's suspense.....	222,594 30	Rail Renewal Account.....	342,083 04
Receiver General, Provident Fund		Fire Renewal Account.....	297,442 59
Account.....	1,899,989 53	Unclaimed Wages Account ...	2,048 30
Receiver General, Unclaimed		Employees Medical Fund Ac-	
Wages Account.....	4,514 36	count .....	5,501 55
Receiver General, Medical Fund		Expenditure for Road and Equip-	
Account .....	35,176 36	ment Suspense—Stores. ....	18,672 95
Receiver General, Apprentice		Apprentice Fund.....	2,509 76
Fund Account.....	2,509 76	Suspense Account—Rental of	
Commissary Stock .....	32,990 04	Leased Roads.....	550,000 00
Station Agents.....	495,514 05	Freight in transit.....	71,776 62
Rail Loan Account .....	89,342 24	Individuals and Companies Led-	
Commissary Stock—Moncton Res-		ger .....	109,927 93
taurant .....	405 46	Individuals and Companies Led-	
Commissary Stock—Newcastle		ger—Suspense.....	29,499 64
Restaurant. ....	317 59	Traffic Ledger.....	31,253 32
Railway Equipment Service. ....	7,009 38	Car Service Ledger. ....	10,255 20
Expenditure for Road and Equip-		Rents Ledger.....	166 74
ment Suspense—Grand Trunk			
Pacific Railway.....	18,354 34		
Halifax Ocean Terminals.....	375,589 78		
Individuals and Companies Led-			
ger .....	1,352,816 63		
Individuals and Companies Led-			
ger—Suspense.....	54,396 61		
Traffic Ledger.....	212,754 41		
Car Service Ledger.....	19,517 41		
Rents Ledger .....	6,743 19		
Advances.....	54,693 46		
	9,787,268 64		9,787,268 64



## SESSIONAL PAPER No. 20

## GENERAL STORES ACCOUNT.

DR.	\$ cts.	\$ cts.	CR.	\$ cts.	\$ cts.
To balance March 31, 1916.....		2,348,359 20	By issues during year ended March 31, 1917.	13,104,399 57	
Purchases during year ended March 31, 1917.....	10,166,227 12		Sales of material, fuel, etc.....	358,383 71	
Charges from other departments.....	5,889,595 44		Sales old material... ..	332,688 53	13,795,471 81
Labour.....	128,891 95		Balance—		
Staff pay rolls.....	80,500 84	16,265,215 35	Ordinary stores including fuel.. ..	4,071,207 71	
		18,613,574 55	Roadway and bridge material.....	746,895 03	4,818,102 74
					18,613,574 55

## STATEMENT OF CASH RECEIVED.

DR.	\$ cts.	CR.	\$ cts.
To Balance on hand April 1, 1916....	02	By Amount deposited to the credit of the Honourable the Receiver General of Canada during the year ended March 31, 1917 ....	31,036,533 99
Amounts received during year and credited as follows:—		Leaving a balance on hand at March 31, 1917, as follows.....	02
Station agents .... \$19,222,288 90			
Traffic ledger..... 6,708,998 04			
Car Service ledger.. 169,597 98			
Individuals and Companies ledger 4,384,526 59			
General ledger..... 517,795 47			
Rents ledger..... 33,327 01			
	31,036,533 99		
	31,036,534 01		31,036,534 01

## RAIL RENEWAL ACCOUNT.

	\$ cts.
On April 1, 1916, there was a balance to the credit of the Rail Renewal Account of. ....	340,000 00
There was transferred from the N. B. & P. E. Island Railway an amount to the credit of the Rail Renewal Account of.....	2,083 04
Leaving a credit balance to the credit of Rail Renewal Account on March 31, 1917, of.....	342,083 04

## FIRE RENEWAL ACCOUNT.

	\$ cts.
On April 1, 1916, there was a balance to the credit of the Fire Renewal Account of.....	307,943 21
There has been charged during the year against the above amount .....	10,500 62
Leaving a credit balance to the credit of the Fire Renewal Account on March 31, 1917....	297,442 59



EQUIPMENT RENEWAL ACCOUNT.

	DR.	CR.
	\$ cts.	\$ cts.
There was a credit balance at April 1, 1916 to the credit of Equipment Renewal Account of. ....		3,064,700 62
During the year ended March 31, 1917, there was credited to the Equip- ment Renewal Account on account of charges to Improvements and Betterments .....		1,070,334 64
Cash received from sale of old Rolling Stock.....		40,266 01
		4,175,301 27
There has been charged during the year against the above account for Rolling Stock purchased:—		
10 Pacific Type Locomotives.....	247,720 05	
10 Santa Fé Locomotives.....	520,371 56	
20 Mikado Freight Locomotives.....	776,545 00	
1 Second-Hand Locomotive.....	19,000 00	
1 Locomotive, balance of contract of six from Canadian Allis-Chalmers, Ltd.....	21,575 00	
Balance on 15 Freight Locomotives, contract of 1915-16. ....	187,058 41	
Applying Superheaters to Locomotives.....	97,497 10	
Freight charges on Locomotives purchased in 1915-16.....	715 80	
Repairs to Locomotives in transit purchased in 1915-16.....	341 50	
Pneumatic tools for Moncton Shops.....	840 00	
7 Steel Sleeping Cars.....	\$194,910 88	
2 Postal Cars.....	8,964 61	
	203,875 49	
12 Second Hand Sleeping Cars.....	18,000 00	
Repairs and alterations.....	18,240 14	
	36,240 14	
8 Second Hand Sleeping Cars.....	12,000 00	
Alterations and changing 6 to Hospital Cars.....	15,150 93	
	27,150 93	
2 Second Hand Dining Cars.....	14,000 00	
Repairs and alterations.....	1,354 72	
	15,354 72	
2 Second Hand Parlor Cars.....	3,000 00	
Alterations.....	262 21	
	3,262 21	
1 Second Hand Baggage and Mail Car.....	2,000 00	
1 " " " Passenger Car .....	2,000 00	
1 " " " Mail Car.....	2,000 00	
Changing to Dining Cars.....	1,475 68	
	7,475 68	
2 Second Hand Day Coaches.....	2,000 00	
Repairs and alterations.....	1,104 46	
	3,104 46	
2 Second Hand Tourist Cars.....	3,713 46	
1 " " " ".....	1,745 95	
Alterations to 10 Second Hand Tourist and 8 Second Hand Sleeping Cars, purchased in 1915-16.....	13,500 00	
Linen for 10 Second Hand Sleeping Cars .....	9,139 12	
Cost of changing 4 Sleeping Cars to Hospital Cars.....	3,500 06	
Bedding and Equipment for Sleeping Cars changed to Hospital Cars..	1,427 41	
Changing Postal Cars from oil to gas lighting.....	5,430 00	
Changing 3 Commissary Cars to Commissary and Dining Cars combined	1,228 70	
Equipment for " " " ".....	236 00	
Freight charges paid on Second Hand Rolling Stock.....	1,163 26	
Expressage and Expenses Account Cars.....	6 50	
50 Platform Cars built in Moncton Shops.. ....	12,409 82	
Changing 25 Box Cars to Vans.. ....	23,322 83	
Equipping 490 Box Cars with draft arms and steel buffers.....	45,522 62	
Changing Centre Dump to Side Dump Cars.....	800 87	
Fitting up an old Box Car for the Electrical Department .....	94 60	
10 Steel Snow Plows .....	67,873 59	
1 Rail Loading Machine.....	448 54	
1 Gas Tank and Car.....	5,100 00	



SESSIONAL PAPER No. 20

EQUIPMENT RENEWAL ACCOUNT—*Con.*

	Dr.	Cr.
	\$ cts.	\$ cts.
Rolling Stock purchased from the O'Brien Companies for Transcontinental Railway in 1915-16 and transferred to Intercolonial Railway:		
108 Hart Cars. ....	\$ 83,700 00	
1 60-ton Lidgerwood Unloader.....	4,300 00	
2 Ballast Side Plows ..	1,200 00	
1 Ballast Centre Plow.....	600 00	
6 Locomotives ....	45,000 00	
1 70-ton Bucyrus Shovel.....	8,000 00	
1 60-ton Marion Shovel.....	6,500 00	
	149,300 00	2,514,092 38
Leaving a credit balance to the credit of Equipment Renewal Account on March 31, 1917.....		1,661,208 89

## NEW BRUNSWICK AND PRINCE EDWARD RAILWAY.

## RENTAL ACCOUNT.

Dr.	\$ cts.	Cr.	\$ cts.
Mar. 31, 1917.. To rental of New Brunswick and Prince Edward Island Railway from August 1, 1915, to October 22, 1915—82 days—4% on \$170,000 .....	1,527 67	Mar. 31, 1917. By Dominion of Canada	5,673 42
From October 22, 1915, to March 3, 1916—4% on \$120,000.....	1,749 04		
From March 3, 1916, to November 1, 1916—4% on \$90,000. ....	2,396 71		
	5,673 42		5,673 42

## INTERNATIONAL RAILWAY OF NEW BRUNSWICK.

## RENTAL ACCOUNT.

1917.	Dr.	\$ cts.	1917.	Cr.	\$ cts.
Mar. 31	To rental of International Railway of New Brunswick from February 1, 1916, to January 31, 1917.....	90,000 00	Mar. 31	By Dominion of Canada.....	90,000 00
		90,000 00			90,000 00



8 GEORGE V, A. 1918

TRANSCONTINENTAL RAILWAY.

RENTAL ACCOUNT.

	\$	cts.
Amount paid to Grand Trunk Pacific Railway for rental of Lake Superior branch from April 1, 1916, to March 31, 1917, inclusive, at \$50,000.00 per month .....	600,000	00

VALE RAILWAY.

RENTAL ACCOUNT.

1917.	DR.	\$	cts.	1917.	CR.	\$	cts.
March 31.	Amount paid Acadia Coal Company for one year's rental of the Vale Railway, from May 1, 1915, to April 30, 1916 .....		1,200 00	March 31.	By Dominion of Canada .....		1,200 00
			1,200 00				1,200 00

ST. JOHN AND QUEBEC RAILWAY.—Revenue Account, Year ended March 31, 1917.

Expenditure.	\$	cts.	Earnings.	\$	cts.
Maintenance of ways and structures...	31,237	01	Passenger .....	28,733	00
Maintenance of equipment .....	3,813	32	Freight .....	50,385	99
Traffic .....	3,007	57	Mail and express .....	1,614	27
Transportation—Rail line .....	56,534	45		80,733	26
General .....	3,708	07	LESS miscellaneous .....	9,973	64
				70,759	62
			Balance .....	27,540	80
	98,300	42		98,300	42

ST JOHN AND QUEBEC RAILWAY—General Balance, year ended March 31, 1917.

Dr.	\$	cts.	Cr.	\$	cts.
To General Stores .....	104	33	Dominion of Canada .....	7,414	09
Cash in transit .....	65	23	Rails suspense .....	358	30
Freight in transit .....	70	53	Traffic ledger:		
Auditor's suspense .....	25	37	Canadian Government Railways...	6	11
Province of New Brunswick .....	2,977	51	I. & C. ledger .....	626	02
Station agents .....	2,334	51			
Traffic ledger:					
Dept. of Militia and Defence...	10	26			
I. & C. ledger suspense .....	145	60			
I. & C. ledger .....	2,671	18			
	8,404	52		8,404	52



## SESSIONAL PAPER No. 20

## ST. JOHN AND QUEBEC RAILWAY—Statement of Cash received, year ended March 31, 1917.

Dr.	\$ cts.	Cr.	\$ cts.
To Balance on hand April 1, 1916.....	Nil.	By Amounts deposited to the credit of the Honourable Receiver General of Canada during the year ended March 31, 1917.....	85,218 74
Station agents.....\$ 59,538 83			
Traffic ledger... .. 21,067 95			
Individuals and Compan- ies ledger..... 4,436 96			
Rents ledger ..... 175 00			
	85,218 74		
	85,218 74		85,218 74

## ST. JOHN AND QUEBEC RAILWAY—General Stores Account.

Dr.	\$ cts.	Cr.	\$ cts.
To Balance March 31, 1916.....	68 26	By Issues during year ended March 31, 1917. ....	1,285 82
To Purchases during the year ended March 31, 1917.....	1,321 89	Balance March 31, 1917.....	104 33
	1,390 15		1,390 15



8 GEORGE V, A. 1918

## APPENDIX III

## REPORT OF THE CHIEF ENGINEER OF THE DEPARTMENT.

OTTAWA, April 1, 1917.

SIR,—I have the honour to submit my annual report for the fiscal year ending March 31, 1917.

Attached hereto will be found the annual report of the Superintending Engineers of the several canals, the Superintendent of the Trent Canal, the acting Engineer in Charge of the Welland Ship Canal, the Engineer in Charge of the car ferry terminals at Cape Tormentine, the Chief Engineer of the Hudson Bay Railway, the Engineer in Charge of the Hudson Bay Railway terminus at Port Nelson.<sup>1</sup>

## CANALS.

The through water route between Montreal, at the head of ocean navigation, and Fort William and Port Arthur, on the west shore of Lake Superior, comprises 74 miles of canal, with forty-eight locks, and 1,155 miles of river and lake waters, or a total 1,229 miles. The minimum depth of water on this route is 14 feet. From Montreal to Duluth, on the southwest end of Lake Superior, the total distance is 1,354 miles, and to Chicago 1,286 miles. A summary of this route will be found in part VII, together with details of the several works thereon.<sup>1</sup> Connection is made with the Canadian Pacific Railway from points west and south at Fort William and Port Arthur (6 miles apart). From Fort William, connection with the main transcontinental line of the Canadian Government Railways is made by the branch line originally constructed by the Grand Trunk Pacific Railway, but now leased to and operated by the Canadian Government Railways.

On this through route the approaches to the canals and the channels of the intermediate river reaches are well defined and are lighted with gas buoys under the control of the Department of Marine and Fisheries, admitting of safe navigation, in the hands of competent pilots, both by day and night. The Lachine, Soulanges, Cornwall, Welland and Sault Ste. Marie canals are lighted throughout by electricity, and electrically operated. The Farran's Point canal is lighted by acetylene gas.

Of the minor systems, the Murray, Trent, Rideau and Ottawa River Canals may be considered geographically as branches of the through east and west route. In operation, however, these canals serve a distinct traffic of more local nature. Isolated from the systems just mentioned, the navigation of the Richelieu River, from its junction with the St. Lawrence at Sorel to Lake Champlain, is effected by means of the St. Ours lock and the Chambly canal; while in the extreme east the St. Peter's canal provides communication between the Bras d'Or lakes of Cape Breton Island and the Atlantic Ocean.

Detailed information respecting the several canals is contained in an appendix.

<sup>1</sup> These reports are not printed.

<sup>2</sup> Not printed.



## SESSIONAL PAPER No. 20

With the exception of the Trent canal, where the construction of an extension of the present system to an outlet on Lake Ontario is still in progress, and the Welland Ship Canal, fully described further on in this report, the work executed during the past year has been almost wholly of the nature of improvements and repairs of existing works.

## LACHINE CANAL.

Traffic was carried on uninterruptedly during the entire season except during ten days of July, when repairs were being made at weir No. 2. The foundation of this weir had become undermined and a sudden collapse ensued. It was found necessary to reconstruct the weir and make other somewhat heavy repairs, all of which work was satisfactorily completed by the close of the navigation season. In addition to the foregoing, the tail-race at the Mill Street power station was rebuilt in concrete and its discharge capacity doubled, the head-race was widened for half its length, and the site of the dry dock was lowered 2 feet so that vessels of 12 feet draught can now be admitted.

## SOULANGES CANAL.

Small repairs and improvements only have been made on this canal during the past season. Among these might be mentioned the substitution of incandescent for arc lamps on the guard pier at Coteau Landing and the installation of cast-iron mooring posts set in concrete at various points between Rouge River bridge and the guard lock.

## ST. ANNE'S LOCK

The repairs made during the year at this lock were of minor importance. Navigation was maintained without interruption.

## ST. OURS' LOCK.

With the exception of the rebuilding of a pair of lock gates, the repairs made at this lock during the year do not merit special mention.

## CARILLON AND GRENVILLE CANALS.

A pair of gates for lock 6 were rebuilt during the year, and the gate lifter renewed. Beyond this no other repairs or improvements were made beyond those required for the usual maintenance of locks, buildings, roads, etc.

## CHAMBLY CANAL.

All syphon culverts under the canal were cleaned; the lower wing-wall of lock 4 on the west side was rebuilt, and the wooden site of lock 6 was renewed in concrete; the passing basin near bridge 6 was widened and deepened. Other lesser repairs were also attended to.

## BEAUHARNOIS CANAL.

This canal has been under lease to the Canadian Light and Power Company since 1907, and is, with the exception of a few minor works connected with it, no longer under the control of this department. Of these minor works the Hungry Bay and Ste. Barbe dikes, however, received some attention during the past year. The macadamized road on the top of the Hungry Bay dike was thoroughly repaired, as also was the stone



8 GEORGE V, A. 1918

protection wall which follows this road. Certain weak spots along the Ste. Barbe dike are to be repaired during the coming season with clay deposited at various points along it last summer.

## CORNWALL CANAL.

During the entire season the canal was operated without any serious interferences to traffic through accident or other cause.

Among the more important improvements and repairs effected during the past year the following may be noted: The old wooden service bridge over the large waste weir south of lock 17 was replaced by a reinforced concrete bridge. A reinforced concrete service bridge, 150 feet long, was constructed over the supply weir at lock 21. All the service bridges over the weirs and intakes of this canal, as well as the beams carrying valve-operating machinery, have now been reconstructed in reinforced concrete. Above the head of old lock 17, a pile dock, 180 feet by 24 feet, was built, replacing the former floating dock. The floor and floor timbers of the swing bridge over the canal at Cornwall were entirely renewed. In addition to the foregoing, a large number of minor renewals and repairs were attended to.

## FARRAN'S POINT CANAL.

Repairs of a minor nature only were found necessary for the efficient maintenance of this canal during the past season.

## RAPIDE PLAT CANAL.

A reinforced concrete service bridge, 80 feet long, was constructed over the supply weir to lock 24, and the wooden beams carrying the machinery for lifting valves in this supply weir were replaced by reinforced concrete beams. A number of minor repairs were also attended to.

## GALOPS CANAL.

On the south bank of this canal west of Iroquois, 2,300 feet of the stone protection was taken down and rebuilt, and on the north bank similar repairs for a length of 330 feet were made. The masonry wing walls of the south abutment of the headrace bridge at Iroquois, the foundations of which had badly settled, were taken down and rebuilt. A corrugated galvanized steel culvert, 92 feet long, was laid under the highway west of the Cardinal bridge, by means of which the land on the north side of the highway is now efficiently drained. The usual minor repairs and improvements to the canal lands were also attended to.

## MURRAY CANAL.

This canal was operated without accident or delay to navigation during the entire season. Stone protection walls were repaired or relaid for a length of 11,400 feet. Along the north bank the highway was regraded and gravelled. All bridges crossing the canal were painted and many other lesser repairs and renewals attended to.

## RIDEAU CANAL.

The repair and maintenance works were of the same character as in previous years. The chamber of lock 5 at Ottawa and the lower entrance at Jones' Falls were rebuilt. The old stone waste weir at Black Rapids was rebuilt in concrete, and the sill of the lock at this point renewed in concrete. The swing span of the Wellington bridge, and the west approach pier of Becketts Landing bridge were renewed.



## SESSIONAL PAPER No. 20

## TRENT CANAL.

The route of the Trent canal as now in operation and under construction lies between Trenton on the bay of Quinté, where direct connection is made with Lake Ontario and Honey Harbour on Georgian Bay, from which port the waters of the upper Great Lakes are at once accessible. The portions of the canal now under construction lie between Trenton and Rice Lake and between Lake Couchiching and Georgian Bay.

*Canal in Operation.*—The extent of the waterway open to navigation lies between Trent bridge and Washago, a distance of 160 miles. In addition to this, other channels maintained would approximate a total of 90 miles.

Of the various repairs and improvements made during the past year, the following may be noted as among the more important: In the river below Bobcaygeon considerable work was done in widening and straightening the channel, the rock being blasted and removed over an area of 49,000 square feet. The reservoir dams at Paint and Percy lakes, and the dam at Elliotts Falls were rebuilt. At the Boundary Road crossing of Grass river between the townships of Bealey and Eldon, the bridge heretofore maintained was replaced by a rock dump. The work of deepening and widening the channel of the Otonabee river below Peterborough was continued, and similar work carried on at Howden's bar, between George street, Peterborough, and Little Lake, and at Robinson's Island bar.

Satisfactory water conditions prevailed during the entire navigation season.

*Canal under construction.*

*Ontario.—Rice Lake Division.*—Under this division is included the portion of the canal which lies between Trenton and the easterly end of Rice Lake, a total distance of  $56\frac{1}{2}$  miles. For construction purposes this division has been subdivided into seven sections or contracts. The line of the river Trent has been followed throughout, and this portion of the system when completed will comprise  $9\frac{1}{2}$  miles of canal, 13 miles of subaqueous channels, and 34 miles of deep-river waterway. From the mouth of the canal at Trenton where the waters of Lake Ontario are connected with, to the normal navigation level of Rice Lake, there is a total rise of 369 feet. This difference of level is to be overcome by eighteen locks. For control of the river and canal levels, fourteen dams will be required. The locks have now all been completed and the lock gates put in place on the first seven locks above Trenton. Work on the dams is now fully completed with the exception of five sluices in the bottom of dam No. 10 which are not likely to be finished until the high-level Grand Trunk Railway bridge at Campbellford has been constructed. Nineteen bridges in all will be required on this division. Seventeen of these are already completed. Of the two remaining, one is the high-level bridge at Campbellford already mentioned, and the other the Gilmour Siding bridge below lock 1, part of the substructure of which has already been built. All these bridges with the exception of that at Campbellford are of either swing or bascule type. The locks are constructed of monolithic concrete, are 175 feet long and 33 feet wide, and provide for a depth of water over the sills of 8 feet. The entire work of this division of the canal will, when completed, have involved the removal of 1,500,000 cubic yards of earth, and 1,250,000 cubic yards of solid or loose rock, and the placing of 400,000 cubic yards of concrete. The estimated cost of this work is placed at \$5,100,000, of which sum 97 per cent has been expended to date. Very complete and interesting details in regard to the foregoing will be found in the report of the superintending engineer, appended hereto.<sup>1</sup>

<sup>1</sup> Not printed.



8 GEORGE V, A. 1918

*Severn Division.*—Under this division is included the portion of the canal between Lake Couchiching and Port Severn, on Georgian Bay, a total distance of 43 miles. In this distance there will be included 4 miles of canal,  $5\frac{1}{2}$  miles of subaqueous channel, and  $33\frac{3}{4}$  miles of deep river and lake navigation. The rise of about 139 feet between the level of Lake Huron and that of Lake Couchiching will be overcome by five locks. For the regulation of the river levels, thirteen dams will be required. The route of the canal will be crossed by eight steel bridges, five for highway and three for railway traffic. Five of these bridges will be fixed spans, and the remainder swing spans. For construction purposes this division has been subdivided into four sections or contracts known as Sections 1, 2 and 3, and the Port Severn section. Section 1 is not yet under contract, and it is not likely that tenders on it will be called for until the close of the war. The work to be undertaken will include the construction of three locks and two regulating dams and will extend from deep water in Georgian Bay near Island No. 181, 17 miles easterly to a point a little above the Big Chute near the mouth of the Severn River. Section 2, now under contract, extends from the Big Chute to a point above McDonald's Rapids, a distance of  $11\frac{1}{2}$  miles. The work included in the contract comprises principally the construction of a dam at Pretty Channel, a dam lock and power-house at Swift Rapids, and the reconstruction of the Canadian Northern Railway bridge at Ragged Rapids. The dam at Pretty Channel was completed towards the close of 1915. The dam at Swift Rapids is about half finished, and will, it is anticipated, be completed during the coming season; the power-house was completed last December. Good progress has been made on the Swift Rapids lock, and it is expected that the work will be well advanced towards completion by the end of the coming navigation season. Work in connection with the railway bridge at Ragged Rapids is still under way. Section 3, which is about  $15\frac{1}{2}$  miles in length, extends from the easterly end of Section 2 to deep water in Couchiching Lake. The contract for the work to be undertaken includes the construction of a lock just north of Lake Couchiching, two highway swing bridges, one railway swing bridge, and several small dams near Washago, as well as a large amount of rock and earth excavation. The excavation for the lock has been taken out, and the concrete work will probably be completed this coming season. Of the two highway bridges included in the contract, that at Muskoka road was completed in 1915, as also the substructure of the Hamlet Highway bridge. The railway swing bridge was practically completed last January, but is not yet in commission. The excavation of the canal prism between the lock and Lake Couchiching is well advanced towards completion, as also is the dredging of the lake channel.

## WELLAND CANAL.

During the past navigation season a total of 2,552 vessels passed through this canal, a decrease of a little over 8 per cent on the traffic of the year before. Of the various repairs and improvements carried out during the year, the following may be noted as among the more important: On the new canal a large number of arc lights were replaced by nitrogen-tungsten lights, a considerable economy being effected thereby. On the old canal, wooden foot bridges at four of the locks were replaced by reinforced concrete structures. At Thorold, concrete sidewalks were laid on both sides of the Albert Street bridge, and a concrete wing-wall constructed at the easterly abutment. The damages sustained last year at Dunnville, by bridges and other works on the canal feeder, were fully repaired. A small wooden highway bridge over the canal feeder at the Forks Road was renewed in reinforced concrete.

## PORT COLBORNE ELEVATOR.

Although in actual bushels handled, the business of the grain elevator again showed a decrease owing to existing war conditions, the net earnings on the season's work were slightly in excess of those of the 1915 season, a fact that may be ascribed to



## SESSIONAL PAPER No. 20

the revenue derived from the sacking of oats for European shipment, a new undertaking for this elevator. Only slight repairs of a very unimportant nature were required during the past fiscal year.

## WELLAND SHIP CANAL.

Work on the new ship canal was continued up to the end of the fiscal year 1916-17, when, on account of the unusual conditions brought about through the present war, the department notified all contractors to suspend work for a period of one year. The work as carried on up to then was divided into nine sections, numbered in order from the Lake Ontario end of the canal. Up to the end of 1916, operations had been under way on sections 1, 2, 3, and 5.

*Section No. 1.*—The work included in this section covered principally the construction of the new harbour at the Lake Ontario end of the canal, and the lock and entrance to the canal connected therewith. Work had progressed very favourably up to the time of closing down, and is now two-thirds completed.

*Section No. 2.*—The work which has been carried on on this section has comprised the excavation of the canal prism and the building of embankments, the construction of two single locks with entrance walls, weirs, etc., and the building of the substructure of a number of bridges crossing the canal. Good progress was made on all these works, and of the total amount included in the contract more than half had been completed when work ceased.

*Section No. 3.*—The work which has been in progress on this section has included the excavation of canal prism and lock sites and the formation of embankment, the construction of one single and three twin locks, the building of a large earth dam with concrete core wall, and a diversion of a portion of the Welland Division of the Grand Trunk Railway to permit of a more satisfactory location for the canal. The work covered by this contract is about one-third completed.

*Section No. 5.*—The work on this section has included the widening, and deepening of the existing canal between Allanburg and Port Robinson, or for a distance of about  $2\frac{1}{2}$  miles. Work progressed satisfactorily up till the closing down of operations at the end of last year, when the undertaking covered by the contract was about two-thirds completed.

In the annual report of the engineer in charge, appended hereto,<sup>1</sup> complete and interesting details regarding the various works carried out up to the close of the 1916 season have been gone into. A full description of the whole scheme of the ship canal route will be found in the report of the engineer in charge for the year 1912-13.

## ST. PETER'S CANAL.

This canal, the reconstruction of and improvements to which are now nearing completion, connects the Bras d'Or lakes of Cape Breton island with St. Peter's Bay and the Atlantic Ocean on the south coast. It is operated by one tidal lock. During the season of 1916 the various works which have been under way since May, 1912, were practically brought to completion. The principal items of work yet to be done are the finishing of the dredging at the Atlantic end of the canal, the construction of a small crib, the building of a few hundred feet of concrete wall, and the general grading and trimming up of the entire work, all of which, it is confidently expected, will be accomplished during the coming season.

<sup>1</sup> Not printed.



8 GEORGE V, A. 1913

## SAULT STE. MARIE CANAL.

During the past year there has been a very marked increase in the traffic which has passed through this canal, an increase of nearly 30 per cent having been shown over the previous year's figures. This increase may be ascribed both to the unusually heavy demand for iron ore and to the very favourable water conditions which prevailed throughout the season. Only one accident of importance occurred during the navigation season, and the damage caused thereby was repaired at slight expense. The work of renewing the top of the lower south pier, which was commenced two years ago, was continued; about 175 feet of pier was taken down to below water level, and the timber cribwork replaced by concrete walls filled with stone. A little over 300 feet of pier still remains to be reconstructed in a similar manner.

## RAILWAYS.

## CAR FERRY TERMINALS—NORTHUMBERLAND STRAIT.

This undertaking comprises the construction of harbour works, landing piers, etc., at Cape Tormentine, New Brunswick, and at Carleton Point, Prince Edward Island, and the building of about 3 miles of railway connecting the Cape Traverse branch of the Prince Edward Island Railway with the Carleton Point terminal. The width of Northumberland strait between Cape Tormentine and Carleton Point is 8 miles.

At Cape Tormentine, all work has now been completed except at the breakwater, where a considerable quantity of stone filling and capping stone will have to be placed during the coming season. The installation of an electric lighting plant, for which a contract has been let, has also still to be effected.

At the Carleton Point terminal all work is now complete except the dredging of the turning basin, which it is expected will be finished this year.

The Carleton Point Branch railway has been completed.

The transfer bridges at both terminals, which have been constructed under contract by the Dominion Bridge Company, are now practically ready for operation.

## HUDSON BAY RAILWAY.

During the past year grading has been carried as far as Port Nelson with the exception of a few gaps which amount, in all, to only 11 miles. Over a million yards of material have been handled. Main-line track, with the necessary sidings, has been laid to the second crossing of the Nelson river at Kettle rapids, distant about 90 miles from Port Nelson. Track is therefore now laid for upwards of 80 per cent of the entire 424 miles between Le Pas and Port Nelson. Ballasting and surfacing have been carried as far as mile 295, and sufficient deposits of suitable gravel have been found at convenient points to complete the ballasting of the entire line. The telegraph line has been installed as far as Kettle rapids. Water tanks have already been erected at two points. Work was begun on the substructure of the Kettle Rapids bridge last November, but only a commencement could be made before work was stopped by the severity of the winter weather. Work during the past year has been very much hampered through a shortage of labour.

## HUDSON BAY TERMINUS.

The deep-water development of this harbour, consisting of an artificially constructed island situated near the outer edge of the tidal flats, about one-half mile from shore, connected with the mainland by seventeen steel spans of 140 feet in length each, has progressed satisfactorily, considering the natural disadvantage of the climate and



## SESSIONAL PAPER No. 20

the handicap of an unusually stormy season. The supporting bridge piers were completed, as were the steel spans themselves, and the former withstood this year's spring ice shove successfully, a test which had been awaited with great interest. These piers had received large amounts of stone protection, which had been dredged 11 miles up the river, and every precaution had been taken to render them stable against the enormous forces of the Nelson River ice-shoves, but it was satisfactory to have their stability actually proven.

Of the island itself, about 1,600 feet of cribwork, 23 feet high, was completed and partially protected by backfilling for the winter.

Dredging was continued during the season, considerable timber was cut, driven down the Airhole river and rafted down the Nelson a total distance of 136 miles to the works, and various buildings, warehouses, and scows were built.

Navigation of the harbour for the season commenced on June 14, 1916, and the local dredging fleet, with attendant vessels, was floated and at work during the ensuing week. The steamer *Sheba* and *Durley Chine* each made two round trips from Halifax to Port Nelson, the first arrival from sea being on August 8, and the last to leave on October 10.

During the winter months the construction forces were reduced to about one hundred men, which number will be increased to 600 or 700 during the 1917 season.

W. A. BOWDEN,  
*Chief Engineer.*



8 GEORGE V, A. 1918

## APPENDIX IV.

REPORT OF THE CHIEF ENGINEER OF THE WESTERN DIVISION OF THE  
NATIONAL TRANSCONTINENTAL RAILWAY.

I have the honour to submit my annual report for the fiscal year ended the 31st of March, 1917, upon the Western division of the National Transcontinental Railway—Winnipeg to Prince Rupert—1,748 miles, including the  $3\frac{1}{4}$  miles on the shore line of the terminal grounds at the latter point.

The amount of certificates of expenditure up to the 31st of December, 1916, amounted to:—

Prairie section, 915 miles.. . . . .	\$ 37,910,534 88
Mountain section, 833 miles.. . . . .	93,160,195 76
Total .. . . . .	<u>\$131,070,730 64</u>

Estimated value of work remaining to be executed to comply with the Acts of Parliament, contract and specification:—

Prairie section.. . . . .	\$2,297,500 00	
Mountain section.. . . . .	<u>2,330,385 00</u>	\$ 4,627,885 00
Total cost.. . . . .		<u>\$135,698,615 64</u>

Or 1,748 miles at a cost of \$135,698,615.64 = \$77,630.79 per mile.

No further payments have been made up to this date.

There are, in my opinion, many items included in the certificates, which, under the usual term of cost of construction, would not be so treated, but under the contract, etc., they are covered as cost of construction.

I may here remark that the entire Western division is in good safe condition for operation of public traffic, although the track is not up to grade at certain points, embankments being narrow and certain temporary trestles yet to be made into solid embankments, but it must be kept in mind that it is absolutely necessary the road should be kept up to its present standard by careful and judicious maintenance.

The following is a detailed statement of the work remaining to be executed to bring the road up to the standard called for by the Acts of Parliament, contract, and specification:—

Between zero at Winnipeg and 280th mile west thereof, making the structures of a permanent character; and from the 280th mile to the crossing of Long Lake and Saskatchewan Railway, making 25 per cent of the open and box culverts and 50 per cent of pile bridges of a permanent character.. . . . .	\$1,200,000 00
Filling embankments up to subgrade and widening to specification width between Winnipeg and Wolf Creek.. . .	62,500 00
Building a mile of railway through Edmonton, and purchasing property therefor.. . . . .	435,000 00



## SESSIONAL PAPER No. 20

Ballasting to be done to bring road up to specification standard between Winnipeg and Wolf Creek.. . . .	\$ 600,000 00
Temporary trestles to be made into solid embankments, widening embankments and taking care of slides between Wolf Creek and Prince Rupert.. . . .	310,500 00
Ballasting to bring road up to requirements of specification between Wolf Creek and Prince Rupert.. . . .	375,000 00
Three divisional station houses to be built at Prince George, Endako and Smithers.. . . .	75,000 00
Way station houses to be rebuilt at Lake Kathlyn and Ritchie.. . . .	4,000 00
Round house to be completed at Pacific.. . . .	10,000 00
Round house at Prince Rupert to be built.. . . .	125,000 00
Machine shop at Prince Rupert to be built.. . . .	75,000 00
Car shop at Prince Rupert to be built.. . . .	9,000 00
Boiler shop at Prince Rupert to be built.. . . .	90,000 00
Freight shed at Prince Rupert to be built.. . . .	55,000 00
Dock for heavy shipping at Prince Rupert to be built.. . . .	500,000 00
Bridges to be erected on foreshore at terminal yard to be erected.. . . .	47,500 00
Station house at Prince Rupert to be erected.. . . .	176,000 00
Stock yards to be built at Prince Rupert.. . . .	2,000 00
Miscellaneous buildings at Prince Rupert to be built.. . . .	30,000 00
Carpenter shop at Prince Rupert to be built.. . . .	10,000 00
Warehouse on dock at Prince Rupert to be built.. . . .	10,000 00
Riprapping to be done along line west of Wolf Creek.. . . .	45,000 00
Fencing to be erected.. . . .	36,000 00
Steel rails to be provided west of Wolf Creek.. . . .	98,685 00
Track fastenings to be provided west of Wolf Creek.. . . .	12,000 00
Switches to be provided west of Wolf Creek.. . . .	15,750 00
Replacing second quality steel rails with those of first quality.. . . .	1,950 00
Tracklaying in divisional yards west of Wolf Creek.. . . .	10,000 00
Four divisional freight houses to be built at Prince George, Endako, Smithers and Pacific.. . . .	16,000 00
Water services to be completed at Morricetown, New Hazelton and Tyee.. . . .	15,000 00
To provide water service at Prince Rupert.. . . .	25,000 00
Machinery and tools to be provided at divisional points west of Wolf Creek.. . . .	100,000 00
Tool houses to be erected at Cariboo, Fort Fraser, Lake Kathlyn and Beamont.. . . .	400 00
Divisional repair shops to be built at Smithers and Prince George.. . . .	20,000 00
Bunk houses to be erected at Cariboo, Penny, Willow River, Fort Fraser, Burns Lake, Hazelton, Kitwanga and Terrance.. . . .	4,800 00
Section houses to be erected at Cariboo, Penny, Willow River, Fort Fraser, Burns Lake, Hazelton, Kitwanga, Terrance and Prince Rupert.. . . .	10,800 00
Machine shops to complete at divisional points.. . . .	5,000 00
Miscellaneous buildings at divisional points.. . . .	10,000 00
Total.. . . .	<u>\$4,627,885 00</u>

I trust I have placed the position of the works of construction and the condition of the road for the operation of public traffic thereon on the 31st of December, 1916, in a plain and concise manner in which it can be readily understood.

COLLINGWOOD SCHREIBER,

*Chief Engineer West. Div. N.T.Ry.*



8 GEORGE V, A. 1918

## APPENDIX V.

REPORT OF THE CHAIRMAN AND CHIEF ENGINEER, BOARD OF  
ENGINEERS, QUEBEC BRIDGE.

I beg to report progress of work in connection with the construction of the Quebec bridge for the fiscal year ending March 31, 1917, as follows:—

During the past season, fabrication of the entire structure was completed, as well as the erection of the south cantilever arm and the suspended span, thus completing the erection of the entire bridge with the exception of floating in and connecting up of the suspended span to the cantilever arms. The failure of a portion of the contractor's erection equipment at the time when the suspended span was being lifted into place, September 11, 1916, resulted in the loss of the suspended span, or about 5,000 tons of bridge material. As reported at the time, the St. Lawrence Bridge Company assumed the entire responsibility for the loss, and took immediate steps to replace this portion of the structure, at their own expense. Orders for the raw material were immediately placed at the mill in Pittsburgh, and, considering the overcrowded condition of all the mills at the time, remarkably quick delivery was promised, and at the present time, 95 per cent of the material has been rolled and delivered at the shops.

Fabrication has also been going ahead rapidly, and at the present time some 75 per cent of the bridge members have been manufactured and shipped to the site. It is expected that a start on the erection will be made about the middle of April, and that the span can be erected in place early in September.

C. N. MONSERRAT,  
*Chairman and Chief Engineer.*

## REPORT OF THE BOARD OF ENGINEERS QUEBEC BRIDGE.

OCTOBER 19th, 1916.

Your Board begs to submit herewith report on the accident which occurred on the morning of September 11th., resulting in the loss of the centre span while it was being lifted into position between the two cantilever arms of the Quebec Bridge.

A brief resumé of the operations leading up to this accident is as follows:

The span itself and the entire erection equipment and installation had been completed a week or ten days before the date of floating. During this time repeated studies of the whole programme were made, and the men specially drilled in all the mechanical operations that would be required in connection with the lifting of the span. Test loads were applied to the jacks up to 50% in excess of the loads they would have to carry under actual working conditions. Picked men were employed for all the mechanical operations and each man was assigned to a special post.

The centre span had been erected at Sillery, about  $3\frac{1}{2}$  miles below the bridge site, and supported during erection on steel falsework. This span was to be floated on six scows, each 132'-0" x 65'-0" and 11'-6" deep, three being placed under each end of the



## SESSIONAL PAPER No. 20

span. Valves were provided in the bottom of these scows and were kept open after being placed in position in order that the water would flow into them, providing against any lifting movement from the tides, before the appointed time. At one o'clock Monday morning, September 11th., the valves in the scows were closed, and as the tide rose the weight of the centre span was gradually transferred to the scows until at 3.40 a.m. they floated clear of the bottom. At 4.40 a.m. when the scows had lifted about  $2\frac{1}{2}$  feet the tugs began moving the span into the river. Four small tugs and one large tug were attached to the downstream side and two smaller tugs on the upstream side. One large tug was held in abeyance for emergencies, but was not required. At 5.15 a.m. the span had manoeuvred into midstream and a start was made for the bridge site, the span being guided by the lower tugs against the current, and the speed being slightly accelerated by the two upper tugs. A quarter of a mile below the bridge site the speed of the span was checked in order to ascertain if it was under perfect control. The span was brought to a standstill within two or three minutes and held in that position without difficulty. At 6.35 a.m., the span reached its position between the cantilever arms. Steel cables from the hanging mooring trusses were then attached to the span and by means of hoisting engines it was warped into position and held there while the connection between the plate hangers and the span was made. At 7.40 a.m. all the plate hangers on the four corners had been connected up to the pins on the centre span, and a few minutes later the tugs cast off. The entire operation of floating the span and connecting it up to the plate hangers worked exactly in accordance with the schedule that had been mapped out. Nothing occurred that had not been foreseen and provided for. The weather was all that could be desired. There was very little wind and every condition was favourable. At 8.25 a.m. the hanger bars began to take some load as the tide continued to fall. At 8.50 a.m. the jacks began lifting and during the third lift of 2 feet the scows floated clear, leaving the span suspended about 20 feet above the water. As the remaining work of lifting the span into place was simply a repetition of mechanical operations which had already been successfully performed, it was felt by the officials and engineers present that the most difficult part of the work had been satisfactorily accomplished, and after one more lift of the jacks further operations were suspended for an hour to allow the men to go to breakfast.

At 10.30 a.m. lifting operations were resumed until five complete lifts were made on the north side and six on the south. The pins had been inserted connecting the links to the fixed jacking girders, thus transferring the load from the jacks direct to the cantilever trusses. The jacks had been released and the upper jacking girders were being lowered for another lift when a sharp report was heard and the span was seen to tilt towards the west and disappear into the river.

Immediately after the accident your Board, in conjunction with the officials of the St. Lawrence Bridge Company, started an investigation to determine the cause of the accident.

An examination of the main lifting apparatus was made immediately. The lifting hangers, lower supporting girders, jacking girders, jacks and upper supporting girders were in place, and although the lower lifting girders were scarred and scratched and the hangers slightly bent in a few places, this portion of the apparatus showed no sign of failure. (See photos 7 and 8.) As the jacks were idle at the time and the upper jacking girders were being lowered to take the next lift, the cause of the accident could not be ascribed to any failure in the lifting mechanism.

The theory that the span could have slipped off its supports due to some horizontal force created by the lifting operations was investigated. To effect a sliding motion on the supporting pin in the shoe, a very considerable horizontal force will be required. An eccentric concentration of the load on the lifting girders would, if sufficiently eccentric, tend to tip the girders and induce a horizontal force sufficient to cause sliding. Extreme care was taken throughout to prevent any such eccentric loading.



8 GEORGE V, A. 1918

After the span was lifted off the falsework at Sillery, the loading girders were suspended from the ends of the centre span by means of pin-connected bridles "A" (Drawing CS3) which would allow the girder to adjust itself by gravity in an exactly central position under its bearing. While the span was being towed to the site special centering plates "B" (Drawing CS3) were attached to the lower casting "C" (Drawing CS3) and fitted against the ribs of the middle casting "D" (Drawing CS3) in order to insure that both castings and pins must take their exact theoretical positions. These plates were fitted in the shop, match-marked, and shipped loose to the site. It was impossible, therefore, that the load could be distributed to the girder in any other way than as designed. The plates, castings and bearings were examined by our inspectors after being put in place on the morning of the 11th., and also after the load had been taken on the hangers. They were also examined by officials of the Bridge Company within twenty minutes of the time of the accident, and everything was found to be absolutely normal at these points. As there were no other conditions existing which could have created a horizontal force of any consequence, the theory that there was any eccentric load under the conditions existing up to the time of the accident or that there was any horizontal force sufficient to cause movement in a longitudinal direction must, therefore, be dismissed.

The lifting of one corner of the span more rapidly than another would produce a torsional deformation of the span. The trusses of the span are supported by their portal and lateral bracing. If one corner were allowed to deflect or were lifted higher than the other, the bracing would be subjected to further stress due to this movement, and if this action were allowed to go to extreme limits the bracing would fail. Such failure would leave the trusses unsupported, allowing them to buckle laterally. Every precaution, however, was taken to provide against any unequal movement of this nature. "Tell-tales" were attached to each jack at each corner. The "tell-tales" from each set of jacks at one corner were arranged so that, by means of a scale and pointers placed directly in front of the man operating the regulating valves of the jacks, it could be determined at all times during the movement whether the jacks were lifting at the same rate of speed. By manipulating the valves leading to the jacks the fingers of the "tell-tale" from each jack were kept absolutely opposite each other during the lifting operation. If one finger tended to advance ahead of the other this was corrected instantly by means of the controlling valves. "Tell-tales" were also placed at the centre of the operating platform where other controlling valves were situated and connected with each corner of the centre span. In the same way the operator at this point kept the fingers on the scale board exactly opposite, regulating the movement by means of the valves controlling the hydraulic system. This movement of these "tell-tales" was also carefully watched by Engineers of the Bridge Company. Special drills were held several days in advance covering this operation, and the men were thoroughly conversant with the working of the apparatus. When the jacks were raised the two feet required for each movement, as indicated on the gauge by the "tell-tales", the pins in each corner were inserted without further operation of the jacks. This shows conclusively that the "tell-tales" accurately indicated the actual movement of the jacks and that the corners at each end of the span were kept level at all times.

The theory that the span failed as a span from its own weight can be dismissed. There are no exceptional problems in the design of this span. It was designed on the same specification as the cantilevers, which withstood successfully the very severe shock to which they were subjected. Furthermore, it was not carrying at the time more than one-half of the load for which it was designed. The original stress sheets were checked and re-checked several times before this span was manufactured. A re-calculation has again been made, and the results agree with the original calculations. The estimated weight upon which the original dead load calculations were made checks within one-half of one per cent with the actual scale weights.



## SESSIONAL PAPER No. 20

Photograph No. 1 published a few days after the accident, showing the span actually falling, furnished indisputable evidence that the southwest corner fell first, and corroborated the conclusion that your Board had previously reached. The evidence of eye-witnesses, which is borne out by markings on the lifting girders, would indicate that the southeast corner fell next, and that the northeast and northwest corners fell last and practically simultaneously. In view of these facts, primary evidence to account for the loss of the span would naturally be sought at the southwest corner.

A minute examination of the southwest lower lifting girder (see photos 10 and 11 and Drawing CS1) furnishes unmistakable evidence of a failure of one of the erection steel castings which was temporarily supporting the span while being lifted. The strongest evidence of this fact is contributed by the centering plates "B" and "B1" and the suspender bridle "A". The northwest centering plate "B" has been crushed down vertically and across the pin with two of its bolts sheared off and two intact. The suspension bridle plates "A" have also been crushed down vertically and are lying over the centering plate. No evidence of sliding on these plates is to be seen as the paint has not been disturbed except from the effect of crushing. The southeast centering plate "B1" has been sheared off completely and is lying adjacent to its original position. This plate is also crumpled up, giving evidence of a vertical blow. The southwest and northeast centering plates have disappeared, but the bolts of these, as well, as of the southeast plate, have been sheared in a vertical direction, giving further evidence of a vertical blow. It is impossible that the middle casting "D" (Drawing CS3 and photo 9) could have slipped off the pin in its normal position without having carried away the northwest centering plate "B". The evidence is positive that the damage done to this latter plate was prior to any longitudinal movement of the truss or girder tending to dislodge this corner of the span from its support. Scoriations on the pin show a diagonal movement of some rough surface towards the northeast and the pin also rotated eastward on top about  $1\frac{1}{2}''$ , showing that the effect of whatever action took place kicked the girder south and rotated it horizontally through an angle of about  $30^\circ$ . The hitch angles "A1" for the east suspension bridle plate have been cut through at the same angle, showing the line of travel of the girder in relation to the truss. The south tie-plates "G1" of the box hangers "G" were bent slightly outward due to the rotation of the supporting girders about pin "X" (Drawing CS1) just above the lifting girders, but the connections "G2" of the box hangers to this girder were undisturbed. The lower end of the east plate hangers (See Drawing CS1) was also bent outward and scored, due to the action of cutting their way through the heavy horizontal strut joining the two ends of the trusses of the centre span.

On the assumption that the central erection casting "D" (Photo No. 9) at this corner, failed,—it is possible—in view of the further evidence at hand, to deduce the successive steps in the fall of the span. The failure of this casting would allow the southwest corner of the span to drop on the lower pin "P", or the top flange of the girder "G3" in such a manner as to kick it back towards the south and cause it to rotate about its upper pins. This rotation if sufficiently great, would allow this corner of the span to slip off the supporting girder. The immediate effect of this corner of the span being unsupported would be to cause a momentary rotation of the span about a diagonal axis extending from the northwest corner to the southeast corner and producing an overload at these two corners equal to the capacity of the bracing and end portal to transfer this load. As the bracing was not designed for any such emergency the southwest corner of the span would settle rapidly, tending to turn the span over on its side towards the west. As this movement increased the bracing would crumple up with the inevitable result that the chords would go out of line and trusses thus fail. As the bracing of the span would not be strong enough to distribute the distortion at the south end to the north, the latter ends of the trusses would remain on their bearing until both south ends had disappeared in the water, finally sliding off longitudinally, the inside lifting hangers tearing through the end cross strut in doing so. The



8 GEORGE V, A. 1918

evidence on the other three lifting girders substantially confirms this theory. An examination of the southeast lifting girder (See photos 12 and 13 and Drawing CS1) shows the lower pin missing and, what is somewhat remarkable, the upper pin "P1" resting in the lower casting "C". The four centering plates "B" are in place, three of them being flared outward at an angle of about  $45^{\circ}$ . The fourth, the northwest centering plate "B1", is still securely bolted to the casting, but its upper portion has been flattened downward into a horizontal position. The east suspension bridle is missing but the west bridle "A" is in place, but crushed downward. The east box hanger and plate hangers above are practically undamaged. The west hangers are badly bent outward and scored. The top of the girder is also badly marked and the west end of the girder has its flange angles and plates bent downward. The position and condition of the centering plates show that there could not have been any direct longitudinal sliding motion or the two plates towards the north would have been sheared off. The evidence indicates that when the southwest corner dropped there was a lateral rotation of the southeast end of the span on the lower longitudinal pin. When this motion had continued to such an extent that a lateral rather than a vertical force was directed against the lower pin, this pin was kicked out. The kicking out of the lower pin probably carried the middle casting with it, and the upper pin falling lodged in the pin groove of the lower casting. The rotation of this corner accounts for the crushing of the northwest centering plate and suspension bridles. The dropping of the southwest corner and the turning movement of this end of the span carried the east truss against the inside hanger, bending and mutilating it as it finally tore through the heavy end strut, as indicated by the markings on this hanger.

The condition of the northwest supporting girder and hangers is practically identical with that of the northeast corner. (See photos 14-15-16-17 and Drawing CS2). In each case the two north centering plates "B" (Photos 14 and 16) are in place and undamaged. The south centering plates have their bolts sheared off horizontally and one plate of each girder is missing. In both cases the inside plate hangers are bent to a certain extent and scored "H" (Photo 15) where they tore through the horizontal strut of the centre span. The outside box hangers and plate hangers are undamaged "H1" (Photo 16), with the exception that the north tie plate on the east box hanger is slightly bent outward due to rotation about the pin. The tops of the girders themselves were only slightly damaged on the south face due to the final slipping off of the span.

In view of the foregoing evidence your Board is satisfied that the primary cause of the accident was the failure of one of the temporary erection steel bearing castings (see photo 9) supporting the southwest corner of the centre span. These steel castings were manufactured at the works of the Canadian Steel Foundries, Ltd., Montreal, and the results of the specimen tests showed that the material had met the requirements of the specification in all respects. The machining of the castings was done at the works of the St. Lawrence Bridge Company, where they received careful inspection. They had also been subjected to a test load while at Sillery of about 10% in excess of the loads carried during lifting operations, due to the weight of material trains and temporary track, this track having been removed before floating. At the moment of the accident the castings under the other corners were subjected to an overload of from 70 to 100%, as evidenced by the elongation of the plate hangers supporting the ends of the span. Notwithstanding this fact there are no indications that any of the castings failed at these points. It is, therefore, your Board's opinion that the failure of the erection casting at the southwest corner was due to a flaw or other imperfection which could not be detected, and further that had the casting been sound no failure would have occurred.

The member that failed (Photo No. 9) was a part of the contractor's erection equipment, in use only during the erection and lifting into position of the centre span,



## SESSIONAL PAPER No. 20

and formed no part of the permanent structure. The St. Lawrence Bridge Company have advised your Board that they assume entire responsibility for the failure of this member and the resulting loss of the span, and have already taken the necessary steps towards replacing the lost structure. The length of time required to complete this work will depend upon the deliveries that can be obtained for raw material. We are advised, however, by the St. Lawrence Bridge Company that the mills have undertaken to complete delivery within five months and that rolling has already started. Since the proportion of the steelwork lost amounts to only 8% of the whole, and 92% is at present completely erected, there should be very little delay in the completion of the bridge if these promises are fulfilled.

When the weight of the centre span was taken up by the cantilevers, it caused an estimated deflection at the ends of the latter of about  $7\frac{1}{2}$  inches. The sudden release of this load caused the cantilevers to spring violently upward, setting up severe vibrations which were sufficient to throw persons off their feet. A very thorough examination of the cantilevers has since been made with the result that no sign of injury or movement has any where been found. The elevations of the pins in the trusses, as well as the alignment of the trusses and main posts have been checked by instruments and found unchanged. All joints and connections in the cantilevers, including bracing, have been examined and no evidence of any action can be detected. Rivets in sway bracing and other important connections have been carefully inspected and no loose rivets have been found. Your Board are absolutely satisfied that no damage of any kind has been done to the cantilevers.

Herewith is attached list of plans and photographs accompanying this report.

C. N. MONSARRAT,  
RALPH MODJESKI,  
H. P. BORDEN



